

ITEMS OF INTEREST.

VOL. XVI.

APRIL, 1894.

No. 4.

ORIGINAL COMMUNICATIONS.

THE PEDIGREE OF THE CENTRAL INCISOR.

Dr. Thompson, in World's Congress.

The condition of the upper central incisor in man is something unique, in that while all the other teeth are variably reduced in form and degraded in specialization, the central has not only preserved its special form and maintained the practice of its function, but has indeed advanced somewhat, being rather more highly specialized in man, as an effective cutting-instrument, than in some of the lower forms. Its form in man is similar to that of the apes, but the remainder of the teeth of the human denture have degenerated from the completeness of specialization exhibited in those forms.

The lateral incisor, while highly developed in most individuals, is frequently reduced in form and sometimes is totally absent. This is never exhibited in the central incisor, but it is with the cuspid. The bicuspid, molars, and lower incisors show the effects of degenerative modification; the central incisor alone maintains a high degree of completeness and specialization in man, which makes a study of its evolution of peculiar interest.

The function of dividing and cutting food is performed by various organs throughout the animal kingdom, and even teeth for cutting are developed very low in the scale of life. The cephalopods have cutting teeth placed on the odontophore, but these are not true incisors. The insects and crustaceans cut by means of mandibles, and the "pinchers" of the anterior locomotive organs, which are not true teeth. The leech, nereis, and other worms have saw-like mandibles which are not properly cutting teeth. In fact, the lowest form in which teeth with any approach to the true incisor form are found, is the sea-urchin, *echinus*, which has five incisors arranged around a central point, in the remarkable apparatus called "Aristotle's Lantern." They are used with great force to cut shells and rocks. These teeth are set in true alveoli, and are worked by powerful muscles. This is the lowest form in which true incisors are found.

In the fishes there are no incisors, properly so-called, unless we consider as such the cutting teeth of *sargus*, etc., for the so-called teeth are ankylosed to the maxillary bones.

None of the reptiles have cutting teeth proper; all of their teeth are pointed for seizing and holding prey. The beaks of turtles are analogous to incisors, but are not homologous with them. The same may be said of the bills and beaks of birds.

Most of the lower mammals are deficient in regard to incisors, usually having teeth on the sides of the jaws for grinding purposes only. The kangaroo has large cutting incisors, as it is an exclusive vegetable-feeder. Others of the marsupialia are variously armed, as they may be herbivorous, carnivorous, or insectivorous. In the rodents we find the central incisors developed wonderfully into the long, continuous growing implements used for cutting.

In the herbivora all of the incisors and also the canines are highly developed for cutting purposes. A curious exception is noted in the ruminants, the most of which have no incisors in the upper jaw. In the carnivorous animals the canines being excessively developed and the cutting function being usurped by the long-bladed sectorials, the incisors are much diminished. In the elephant and mastodon the central incisors are developed into long tusks, which are employed as effective digging implements and piercing weapons.

The insectivora, the living representatives of an order which was the apparent predecessor of the quadrumana through the lemuride, we observe that this order presents many remarkable forms of the central incisor. In some of the moles the incisors are small, and in others like a canine, with deep groove. Owen says, "In the shrews the central is very large, with a large talon on the basal ridge, making a deep notch into which the procumbent lower central closes with a hook-like point." This talon, with the deep groove or sulcus, is sometimes reproduced in man, with the characteristic backward curve of the body of the tooth. "The typical shrew usually manifests rodent analogy by the superior size of the anterior pair of incisors in both upper and lower jaws." But this resemblance is only in regard to general contour. "In *sorex* the large upper incisors appear bifurcate, from the great development of the posterior talon." This talon is often repeated on the lateral incisor in man, where a lingual cingulum is not uncommon. "The hedge-hog has large centrals, sometimes with a large interspace." This is perhaps the precursor of the large interspace, which is often present in man, and is so frequently hereditary.

In the cheiroptera, which are closely related to the insectivora, the incisors are variable and may be entirely absent. Some

of the curious forms exhibited in the insectivorous series are passed on and reappear in the quadrumana, and occasionally in man.

The lemurs present considerable variation in the form of the central incisor, which advertise relationships with many groups below them, and present forms which are very aberrant. Tomes says, "Most of the lemurs have upper incisors which are small and widely separated." One of the lowest, and one closely related to the insectivora, is the little flying galeopithecus. Owen says, "In the colugo the two anterior incisors of the upper jaw are separated by a wide interspace. In the Philippine colugo these teeth are small with a simple bilobed crown, but in the galeopithecus the crown is expanded into a plate with three or four tubercles. . . . The lower centrals present the form of a comb produced by the deeper extension of the marginal notches into the crown. These are analogous to those on the edges of the human incisor, but the notches are more numerous and deeper." This tendency to division is recalled by the tubercles on the edges of the incisors of man when first erupted. The longitudinal ridges which lead away from the tubercles are also suggestions of this primitive division of the crown, as an embryonic record of the history of its evolution. This was apparent to the great anatomist Owen before the day of philosophic evolution, and in our day the lesson is beautiful and striking.

In other forms of the lemurs the incisors are projecting, long and narrow, and interdigitate with the procumbent lower incisors, which pass between them for cutting vegetable fiber.

The lowest monkeys, the platyrrhines (or wide-nosed), the American species, are closely related to the lemurs in many respects, notably in having the third premolar. The central incisor begins to approach the final form in the higher groups, but is still somewhat aberrant. Like the lemurs, the incisors of both jaws are directed more obliquely forward, and so are less vertical than in the higher apes and in man. As these are approached, the incisors become more erect, and the form of the crown is, in consequence, less curved, for in the higher primates it is straighter and more in a line with the long axis of the root. In the platyrrhines it is still variably of a scoop shape, resembling the lemurs. The scoop shape is often recalled in man, with the characteristic curve and thin edge.

In the catyrrhines (narrow-nosed), the Old World monkeys, the centrals are much wider and larger than the laterals, but nearer the shape found in man, even in the lower form. In some of the baboons there is a variable basal ridge, which is often greatly

developed on the lingual face. The lingual ridge is often recalled in man, but not on the labial face.

In all the anthropomorpha the centrals are much larger than the laterals, are more vertical than in the lower forms, and assume the final shape presented in man. There is little real difference in the form of the central incisors between the higher apes and man, except in size and quality of structure and in the comparative size of the centrals and laterals. In man the extreme disproportion manifested in the apes is much reduced, *i. e.*, the centrals are smaller and the laterals are larger.

The gibbons are the lowest of the tailless apes. Their centrals are large and strong, nearing the final human form, except that they project and are somewhat of a curved form. In the oranges the centrals are of great size, are twice the size of laterals, and have the basal ridge. The extreme size is recalled in man by those examples which we see of excessively large centrals. Tomes says these teeth are similar to those of man, but larger. In the chimpanzee the centrals are very much reduced from the size in the orang, and approach the proportions of the same teeth in man, but with a prominent basal ridge as in the orang.

In the gorilla the centrals are still nearer the final shape as in man. They are of the same form and proportions, but are larger and of coarser structure than in man, as are all of the teeth of the greatest ape. There is little real difference between the central of the higher apes and man.

A PATHETIC INCIDENT.

[The following reply for a renewal to the *ITEMS* is pathetic. —ED.]

WASHINGTON, D. C., March 6, 1894.

DEAR SIR,

My Papa Dr. Burrows Nelson lost his life in the terrible Ford Theater disaster of June 9th, 1893.

I send you a cutting of June 10th it will tell you all about Papa. I remember how Papa liked to read your book *ITEMS OF INTEREST*. My brother Burrows may be a Dentist some day and he will subscribe for your book.

I am a little girl 8 years old and in the fourth grade, I was always Papa's little house-keeper. I miss him so much. Every little girl on our square has a Papa but me. I have a good Mamma but she is not very well for she grieves about Papa so much. I have two little sisters and three brothers, but no papa.

Good bye

ELLEN WORTHINGTON NELSON.

[The following clipping referred to by the bereaved child explains itself:—ED.]

DR. BURROWS NELSON.

"Say, mister, when is papa coming home? He will come to-morrow, won't he?"

It was a slim and bright-faced little lad who followed the reporter to the door of 823 New Jersey avenue, and piped his anxious query. There were tears in his eyes and his voice quavered, but he did not know his father's fate. Evidently he took the visitor for an officer who had his loved protector in charge for some offense that his childish mind could not grasp. The reporter hurried away.

Of all the horrors of yesterday, and of all the woes they leave behind, none is more sad than the death of Dr. Burrows Nelson. He was a dentist, and practiced his profession in the odd hours left him from his desk duties. His family was large, and he found double work necessary to make both ends meet. A widow and five little children survive him. His wife is on the eve of her sixth maternity. He leaves nothing, his profession and his position being all that he had. His was the last body recovered. It was taken from the ruins at 4.30 P. M., so covered with dust and blood that it was unrecognizable. His family were anxiously inquiring for him all of the day, but were under the impression that he had taken a day off and gone fishing. For some reason he had vacated his desk and gone to the lower floor just before the crash came. Had he remained seated, the probabilities are that he would have been uninjured, as the desk was located in a part of the buiding not affected by the cave-in.

Dr. Nelson has been in Washington over twelve years. He was one of the original faculty of the Columbia Dental College, and was for a long time employed in the office of the Surgeon-General. His father was a consul to the West Indies, and he was born in that country, but on the rolls is credited to West Virginia. He was a grandson of one of the Secretaries of the Treasury, and was universally beloved by his associates. His wife is nearly crazed by her loss, and insists on seeing her dead husband, but this has been forbidden by the physician. In this case there is lacking not one single element of the complete tragedy.

Who can more justly claim a pension from our generous Government than this bereaved family?

WHAT RUBBER PLATES DO TO THE MOUTH.

L. P. Haskell.

I was practicing dentistry fourteen years before the introduction of rubber plates, and then, as ever since, confining my attention exclusively to prosthetic work; began to use rubber within a year after its introduction, and have used it ever since. Within two years after its use we noticed (I was then associated with Dr. Allport) an unusual change in the alveola process, and have been noticing it ever since. I have on my shelves several hundred

models of upper jaws on which I have made metal plates, and there are but six in the whole collection which do not show an extensively undue absorption, a condition of things which did not exist prior to the wearing of rubber plates. This is owing to the retention of undue heat on account of the non-conductibility of rubber. Dr. George Watt's theory was that the retention of undue heat did not cause absorption, but prevented the replacement of new tissue. There are very few exceptions to this rule, and it is its worst feature. The patient should be made aware of the fact, so as to have a choice of materials.

The second fact is that in so large a proportion of mouths the non-conductibility results in a seriously inflamed membrane; the better the suction, so the air cannot circulate, the worse the condition.

The third fact is, though very exceptional, that patients susceptible to the effects of mercury are seriously affected by the mercury in the coloring of the rubber. Following are a number of cases:

Dr. Justin Hayes, of Chicago, for forty years well known as an expert electropathic physician, had a small red rubber plate placed in his mouth, followed by peculiar symptoms, which did not cease till exchanged for black rubber. His wife, several years after, had a celluloid lower temporary plate placed in her mouth, with the same results till exchanged for black rubber. The coloring of the celluloid is the same as red rubber.

A lady from Topeka, Kansas, came to me by advice of a mutual friend, wearing a red rubber plate, and suffering for eleven years from chronic diarrhea, dating from the wearing of the plate; her physician unable to find any relief for her. I made her a continuous gum set. In about two months she broke a tooth and sent it to me for repairs; through some carelessness it was out of her mouth ten days. Six months later she called on me and stated that at the time the set was broken the diarrhea had entirely ceased. While the plate was out of her mouth and she wore the old rubber plate the old trouble returned, but on the return of the metal plate she has had no trouble since. She told her physician of her experience, and he said he did not know that she was wearing a rubber plate, and, had he known it, did not know there was any harm in it, but had been treating her all the time for symptoms of mercurial poisoning, and could not learn that she had ever taken mercury into her system.

Mrs. B., mother of a practicing dentist, then residing in Wisconsin, from the time she began wearing red rubber plates had a severe diarrhea, lasting several years. Her mother, a homeopathic

physician, tried every remedy she could think of, but found no relief. The son came to Chicago to enter the dental college; seeing a paper of mine on the "Injurious Effects of Rubber," sent it to his mother. She at once came to the city and had gold plates inserted, and has never had a return of the difficulty. Singular to say her sister had precisely the same trouble, and found the remedy in the same manner. A patient of Dr. C. C. Beebe's, of Racine, found, on wearing a red rubber plate, a serious inflammation of the throat, which increased till she could no longer swallow solids. She consulted dentists and physicians, even going East for the purpose. The latter told her it was owing to the condition of her stomach. At last she called on Dr. Beebe, then recently established, and he told her it resulted from the rubber plate, and to leave it out of the mouth for two weeks; she did so, and the trouble disappeared. He made her a black rubber plate, and there was no further trouble for six months. She called one day and said her throat was getting bad again, but possibly it could be accounted for. Her children had told her she could not chew gum with false teeth. To show them she could, she had been chewing gum several days. It was rubber chewing-gum, made of the dental rubber.

A lady recently came to me who had been spending several months at a sanitarium for treatment for diarrhea with no beneficial results. Her husband told me of it. I ascertained she was wearing red rubber plates. I suggested she leave them out. The diarrhea soon after disappeared, and she returned to Chicago well, and the mouth in healthy condition. I replaced the rubber plates with aluminum.

I have made a plain statement of facts in my own experience. I can come to no other conclusion than that the mercury in the red rubber was the cause. If any one can give any other satisfactory solution of the problem I should like to hear it.

THE STUDY OF HYGIENE AND HEREDITY IN THE W. C. T. U.

*Jennie M. Walker, State Supt. Hygiene and Heredity,
La. W. C. T. U.*

What have hygiene and heredity to do with temperance?

The laws of hygiene are those laws which, when put in practical operation in our daily lives, form in us such habits as will preserve health and prevent disease. With freedom from disease and suffering, there will be consequent freedom from drugs and tonics and

stimulants. With the normal appetite of health, there is no craving for stimulants. The depraved appetite of the drunkard is either an acquired appetite, or it is an inherited appetite (too often acquired in the sick room from the use of stimulants prescribed, becoming habitual); inherited either indirectly with inherited tendencies to disease which create the abnormal appetite, or it is inherited directly from drinking ancestors.

The physician who habitually prescribes an article which is liable to awaken an inherited, or to create an abnormal appetite that may blast a life-time, and prove the curse of unborn generations, assumes a fearful responsibility. It is therefore because disease and drugs are such potent factors in the spread of intemperance that temperance workers desire teachings of the science of hygiene or the laws of health. A knowledge of the laws of heredity is of equal importance to the cause of temperance, for in no sense are the iniquities of the father visited on the children, to the second, and the third, and the fourth generation more inevitably and surely than in the penalties following the violation of the laws governing the physical constitution of man.

The drunkard transmits to his children, and to his children's children, not his own maudlin foolishness, or his senseless passion, or his morose sullenness, but those conditions of tissues and organs induced by the constant use of alcohol; the impoverished blood, the vitiated secretions, the relaxed muscles, the diseased heart and lungs—diseased by the tainted blood circulating through them. The lower part of the brain, being unnaturally stimulated, is unduly developed, and the offspring inherits the grosser animal propensities, with proportionate decrease of intellectual and moral power. Epilepsy, idiocy, insanity, vice and crime are the heirlooms of the drunkard's offspring. There is no more powerful argument against alcohol to the man who loves his children, than its fearful influence on their future lives in its transmitted effects on their bodies, brains and souls.

To make these effects palpable in all their reality, we must have a knowledge of the action of alcohol on the human system. Before we can comprehend all that is embraced in the study of hygiene and heredity, we must have some primary knowledge of anatomy and physiology. We must understand the phenomena of digestion, assimilation and nutrition before we can appreciate the results of the action of alcohol on the membranes of the stomach, and the effects of vitiated secretions on the blood and on all the other organs, whereby the entire system is debilitated, the nerves shattered, and the whole life wrecked.

This is but a faint outline of the physical effects of alcohol

Its effects on the mind are even more fearful, but time fails for more than an allusion to them. Its effects on home and happiness are but too well known. Let us take up the study of hygiene and heredity (and as preliminary to that anatomy and physiology) in our Temperance Unions. Through our Unions we reach the mothers, through the mothers we reach the children, through the mothers and children we reach the whole world.

A GOOD ROOT FILLING.

M. D. Goble, Dubuque, Iowa.

EDITOR ITEMS:—I am a reader of your ITEMS OF INTEREST, and have been in the practice of dentistry since 1860; expect to "die in the harness." I have never written a line for a dental journal, though have absorbed many a good thing from them.

I have a good thing on root filling, with a record of its use in 300 cases, covering two years, with not an instance of inflammation after filling, nor one failure. It consists of

Chloroform.....	3ss.
Gutta-percha	
Rosin	āā 3j.

M.—Ready to use in two or three days.

Take an 18k. gold wire filed down to a hair point; wrap a fiber of floss silk or linen lint around it. Dip in the chloro-percha rosin, and pump it well into the nerve canal. Then force into the canal a gutta-percha point. Pack it down, and your nerve canal is not only filled moisture-tight, but gas-tight, and the apex and mouths of the tubuli are sealed tight. You have filled the canal with one of the best antiseptic preservatives there is. Take an old pine knot that has lain in the slime and septic matter of the swamps. Though all else about it has decomposed, and is full of filth, if you take your pine knot out and wash it, you will find it as sound and sweet as it was hundreds of years ago, when deposited there. In cutting open a root that has been filled for months and lain in ink for a week, you will find no discoloration of the surface of the canal, and you have a greenish crystalline substance firmly adhering to its walls, and no shrinking of the filling, as there is with chlora-percha, and no gas pits, as there is with gold, tin, or lead.

[Dr. Goble, it is a shame for you to have hidden your light so long. This one ray is worth more than gold. Write again, and let this encourage others who have good ideas.—ED. ITEMS.]

PYORRHEA ALVEOLARIS.

Dr. Luella Cool, San Francisco, Cal.

The mouth of an unmarried woman, aged 35, was in a terrible condition, suppuration extensive, and the teeth very loose and too sore to bite on. The disease was confined to the upper jaw on the right side. I commenced by injecting warm water and a few drops of carbolic acid into the pockets. After thoroughly washing them, I injected peroxid hydrogen, and made an application of tinctures iodine and aconite every other day; I gave her a mouth-wash of ext. hamamelis to use twice a day; cinchonidia pills, 2 grs., three times a day. In two weeks' time she was dismissed, with orders to continue with the mouth-wash and pills.

Ten months elapsed, when she returned with the left side in similar condition. After three applications the mouth was free from pain, and suppuration had ceased. She had experienced no pain or trouble with the right side. I still have her continue the mouth-wash and a tonic of Wyeth's triple phosphates, as I believe her case needs constitutional treatment before the cause is removed. Her teeth are otherwise perfectly healthy, but physically, she is not very strong. I asked her to call every month, and I find her teeth, that have been treated, are in a healthy condition. She is much pleased, as she had previously spent much money elsewhere without relief.

Dr. Eickborn, of Newark, says: Some one is going around the country forming a "collection agency" in cities. One was started in Newark, N. J., a few weeks ago. The head of the concern is a man, a blonde, calling himself E. H. Culbertson. He has left town with some of my bills and bills of other professional men. Please caution all dentists to be careful of all collectors except those from an agency of good standing and under bonds.

SURGERY FOR HICCUGHS.

A successful operation was performed by Drs. Grube and Towle, at Newark, N. J., February 14th, on John Carberry, who had been suffering from a severe attack of hiccoughs for the past eleven weeks. The operation consisted of the removal of a portion of the inferior dental branch of the inferior maxillary nerve, thus destroying the connection of nervous energy between the brain and the diaphragm. The operation occupied about half an hour. Carberry refused to take ether, and joked with the physicians

continually. At the close of the operation he expressed himself as greatly relieved, though the hiccoughs still continued in reduced energy. The doctors are highly pleased with the work, and look for his speedy recovery.

The above newspaper extract is offered for criticism. Assuming the facts of the case as herein reported to be true, on what reasoning could the operation referred to be considered legitimate? It seems to me that the operators must have had their anatomy very much at fault, to suppose that resection of the inferior dental nerve would sever the connection between the brain and the diaphragm. Hiccough is of central origin, though it may be induced, perhaps, by peripheral irritation, and if it could be shown that the dental nerve was involved, it would fall to the province of the dentist to ascertain the source of irritation which would most likely be located in the teeth. Most pathologists ascribe the affection to an irritation of the phrenic nerve, to which attention should be paid, and treatment instituted as the conditions would suggest.

Mr. Carberry has since died.

W. S. Elliott, D.D.S., M.D., Trenton, N. J.

Lead, as a filling, is but seldom used; yet it has its good qualities. It is soft, malleable, cohesive, and easily manipulated. Used alone, it is too soft; but united with tin, it is much improved. Some years since, when in the depot business, we went to the manufacturer of tin foil for a supply, in various thicknesses. It was so easily manipulated, and so cohesive, it became quite popular, and we sold large quantities. But it was not tin foil, but lead and tin. The center of the ingot to be rolled was lead, and the exterior tin. so that the sheet was lead, covered with tin. The proprietor had sold it as tin foil, but he supposed we knew it was not all tin. He said he had never made foil of all tin. Then I was obliged to explain to my customers my mistake, and the trade came to an end, except to several, who were still satisfied to use it. It is the foil used to cover tobacco, corks, yeast cakes, etc.

Teach people to think for themselves instead of having others eternally thinking for them, and ignorance disappears as mist before the sun. If a man walked up and asked you to think for him, you'd naturally imagine he had softening of the brain, or something worse, and sympathize accordingly. How many perform this act of kindness for others without the asking?

CURRENT THOUGHTS.

AMALGAM.

Dr. Edwin T. Darby, Philadelphia.

When the Crawcours came to America in 1833, bringing with them the silver paste of Taveau,—or, as they called it, the “Royal Mineral Succedaneum,”—the dentists of that day looked on it as a black curse; and I am sure, if we had no better amalgam than the silver fillings and mercury with which they sought to build a reputation, we too, would shrink from amalgam, as the better dentists of our country did then.

In 1848, Dr. Thomas W. Evans, of Paris, introduced his amalgam, which was composed of pure tin, cadmium and mercury; but it was soon found that cadmium was one of the very worst metals that could be used in a dental alloy, and its use was soon discontinued. In 1855, Dr. Elisha Townsend, of Philadelphia, advocated an amalgam of four parts silver and five parts tin, which was superior to any which had preceded it, but much inferior to many which have followed it. It was not till 1868 or 1870 that any important improvements were made in dental alloys. The experiments of Fletcher, Hitchcock, Tomes, Walker, Lawrence, Holmes, Dawson, Shattuck, Welch, Flagg, Bonwill, Hammond, and many others whose names do not appear as proprietors of dental amalgams, have done much to perfect a class of filling-materials which we recognize as useful and valuable. The prejudice against amalgam is decreasing day by day, just in proportion to the improvements which are being made in the character of the alloys.

Contrast for a moment the better class of our white alloys of the present day with the filings of silver coin and mercury which were used forty years ago. But some will tell me that all of these alloys contain mercury, and are, therefore, detrimental to the health. To such I would say, Give me proof that amalgam fillings have in any way proved injurious, and I will discontinue their use. I have the profoundest respect for the opinions of my fellow-men, and I cannot but think that the men who have always abstained from the use of dental amalgams have done so from conscientious convictions, and I respect them for being thus consistent; but, on the other hand, there are thousands of men, not less conscientious, who believe they can save teeth with amalgam better than with gold, and they employ it, not because it is cheaper or less laborious, but be-

cause they can do with it that which they could not do with gold. For such men I also have the profoundest respect.

Laying aside for the moment all theories, and dealing only with practical results (and this paper is intended as intensely practical), what are the facts in regard to amalgam as a filling material?

The makers of modern alloys, almost without exception, claim three distinct points of excellence. First, they will not shrink in hardening; second, they will not expand; third, they will not discolor. As proof of the first two, they submit the test experiment of Fletcher, which is the glass tube and the aniline blue, the polished hole in the bar of steel, as suggested by Tomes, and the V-shaped steel trough of Hitchcock. For the third claim, they have no experiment but that of use in the mouth.

It is true that most alloys composed of silver, tin, gold, and platinum or zinc, do not show indications of either contraction or expansion when the experiments are made out of the mouth; but how often we see amalgam fillings in the mouth that have the appearance of having been pushed slightly out of the cavity. Especially is this true of large compound fillings.

Again, how frequently we see this same class of fillings which have the appearance of having contracted, leaving a slight space between the metal and the walls of the tooth. A little of the same mixing put into the glass tube and covered with aniline blue would probably show no similar change.

Again, the same alloy, manipulated in the same way, does not always present the same appearance in the mouth. In one instance it produces a perfect filling, and we are pleased with it; in another instance, where the conditions are apparently the same, it produces an imperfect filling, and we are displeased with it. It is just this variability in the results obtained with any or all of these alloys that at times causes discouragement and chagrin. We have all doubtless seen alloy fillings of our own, or from the hands of others, which have fulfilled in the highest degree the desirable qualities to be sought for in a filling-material; and we have also seen in the mouths of our patients, or in the mouths of other men's patients, results which make us blush at our own, and pity the lack of skill shown by our brother.

It is this lack of uniformity as to result that leads us so often to say that the more we see of amalgam the better we like gold.

Were all cavities to be filled situated on masticating surfaces, and surrounded by strong walls, and prepared with the same care that is usually bestowed on cavities for gold, and then filled with almost any of the better class of alloys in the market, and, after

hardening, smoothed and polished as gold fillings are, there would be little doubt about the saving quality of amalgam.

A combination of gold and amalgam in the same cavity, or brought in contact in the same tooth, is often attended with the most pleasing results. Thirty years ago such a combination would have been thought bad practice; but we have learned some wisdom in thirty years, and, among other things, we have learned that if we do the opposite from what we were then taught we obtain the best results. We have all observed, doubtless, that where a large amalgam filling has been placed on a proximal surface and allowed to come in contact with a gold filling on the masticating surface, the amalgam has turned quite black, but the margins have been clean cut, with none of that bulging from the walls of the cavity already alluded to.

Some years ago Dr. Register, of Philadelphia, suggested the idea of filling large cavities on proximal surfaces two-thirds full of amalgam, and while the material was yet soft working into it gold foil, and completing the last third of the filling with gold. In places where a matrix can be used, and the amalgam confined, excellent fillings can be made. Watt's crystal gold, or the crystal mat gold, can be used for this purpose, and as it absorbs the mercury more readily than foil, I prefer it. Of course, discoloration of the alloy must be expected; but in hidden places or in posterior cavities this is not a serious objection to its use.

The dental profession of America has experienced such disappointment in the use of copper amalgam that I dare hardly mention it as among the filling materials of the future. While I have shared that disappointment in a measure, I cannot feel that keen sense of remorse which some confess. I do not regret having experimented with it, for I have learned some things which could only be known by experience. Copper amalgam is both good and bad. It is good just in proportion as it turns black and remains so; it is bad just in proportion as it assumes that steel-gray color and retains it. The only proper places for it are masticating buccal and lingual surfaces of vital teeth; in such places it has often done good service for a number of years. I have found that by combining about one-fourth part of a good gold and platinum alloy with it, better results are obtained.*

Palladium amalgam makes a filling of superior quality; but it sets with such great rapidity that there is little comfort derived from its use, and it has the objection of intense blackness, resembling charcoal or ebony.

Cosmos.

* We have been confident from the first of this craze for copper amalgam that what Dr. Darby now says would prove true.—ED. ITEMS.

BRIDGE-WORK.

Dr. M. L. Rhein, New York.

No one dares to contradict the fact that bridge-work has been a great blessing to the profession. It has been the means of educating the men engaged in the mechanical construction of these devices to a point nearer to perfection in mechanical technique than has ever before existed in the profession. It has also served as a stimulus to the inventive capacity of dentists, as is easily demonstrated by the vast number of methods now practiced of inserting artificial teeth without plates.

Let us now look at the other side of the picture. What have been the bad effects of this craze for indiscriminate bridge-work? Well do I remember a visit paid to me by a detective of a celebrated bridge-work concern, who was seeking to levy blackmail by threatening an injunction unless royalty was paid. This man came to me in the guise of a patient, and as I entered the waiting-room I could smell bridge-work from the entrance. Who that has come near to the foul-smelling mouths created by such work dares for an instant to deny that while the work has been productive of much good, it has produced a corresponding amount of evil? Many able men in the profession have told me that the visits of people with mouths in such a condition have caused them to irrevocably condemn the work.

Like every innovation of a startling nature, the quacks and charlatans were in the front ranks of those who vaunted this new panacea for human suffering.

This class of harpies were in it for nothing but the dollars they might squeeze from the pockets of the innocent fools who, in answer to their pictorial advertisements, would flock to their offices. As their alluring bait soon crowded their nets with golden fish, they subdivided their apartments into "parlors" for the rich and humbler offices for the poorer classes. They supplied high-priced operators, medium-priced bridge-workers, and low-priced dentists for the poor, "so that no one need go without the priceless blessing."

Dr. Webb, in discussing the paper of Dr. Register, said, in speaking of bridge-work: "The whole operation would have to be well performed by a fine operator, or not performed at all." This sums up in a nutshell the cause for the immense amount of evil that has been caused by the indiscriminate insertion of bridge-work. Fine operators do not grow on every bush, nor exist in every dental office. The operation should never be performed unless by a fine operator, with his best energies devoted to the task.

A large percentage of bridge-work has not only been a failure, but a positive source of injury to the general health of the patient, by the utter disregard paid by the *mechanic* to the necessary treatment of the portions of the mouth to be bridged, and more especially to the teeth to be used as abutments.

This is well illustrated by a case where the operator was, without doubt, a skilful mechanic. With that reckless disregard for the health of a root used as an abutment, which only the densest ignorance would dare to assume, he stated that he "never bothered about sealing the ends of roots."

In this case the patient on whom he demonstrated his method of work was compelled to have the main tooth used as an abutment extracted. It was then noticed that this dental carpenter had pierced the side of the root with a post, which he had firmly screwed about one-quarter of an inch into the maxilla—a very firm anchorage, if the human economy would tolerate it. The flow of pus and disagreeable odor that started up within two weeks of the operation did not cease till not only the tooth was removed, but also a piece of necrosed bone, about one inch long. This is an example of the greatest evil that has attended the introduction of bridge-work—its insertion into the mouth without regard to the health of the patient, and by men lacking in the knowledge that would enable them to distinguish between health and disease.

To sum up, the evil wrought by bridge-work is due to its being practiced so largely by men of three classes: First, those lacking in ability; second, the uneducated; third and worst of all, those whose conscience has become so atrophied that a microscope would scarcely find it.

Admitting the abuse of this work, but recognizing the practical necessity for it in the increased comfort it so often gives to suffering mankind, let us leave the theoretical and consider the practical side of the question.

The method first advanced by Dr. Webb, of filling single teeth into proximal cavities in adjoining teeth, is to-day, with some slight modifications, an excellent way of replacing single anterior teeth; but when this is put into practice in the posterior portion of the mouth, or where more teeth are to be supplied, the straine from mastication is too great in the majority of cases. There are unquestionably numerous cases of large bridges held securely for years in this way. In fact, the writer can point to the porcelain bridge of eight teeth illustrated in Evans' book on "Crown- and Bridge-work," and inserted in this manner, as being in good condition to-day, having been in use now five and one-half years. The amount of masticating force in the jaws of this patient is

much below the average, and in other mouths, where the force is about the average, such pieces have been known to give way, no matter of what material they were constructed. With our advanced skill, and considering how difficult it is to keep the parts under such extensive bridges clean, they must be discarded.

To-day, the vast majority of the profession, in speaking of bridge-work, refer to one solid piece of work which terminates at the ends in artificial crowns, which are cemented over teeth or into roots, which are to serve as the necessary abutments.

The objections to this class of bridge-work are as follows :

First. The rigidity of the bridge is abnormal. While the artificial substitutes should be immovable, as far as any possibility of being thrown out of position is concerned, still, to relieve the abutments from excessive pressure, it is necessary to get a delicate movement which will approximate the cushiony elasticity of the natural teeth in the alveoli.

Second. The so-called self-cleansing spaces are not only a receptacle for débris, but a source of constant annoyance to the tongue, and consequently often interfere with speech.

Third. When it becomes necessary to repair an immovable bridge, the result is a bungling and clumsy piece of work, as it must be done in the mouth. The removal of the piece generally entails the entire destruction of the crowns which go over the abutments.

Fourth. Where the abutments are teeth with living pulps, it necessitates either the removal of the pulp or sufficient of the exterior of the tooth to enable a solid crown to be perfectly fitted to it. In overhanging teeth and those loosened by attacks of pyorrhea alveolaris, the removal of sufficient amount of tooth-structure generally invites subsequent troubles of a serious nature.

These four important objections should deter any conscientious man from inserting bridges in this manner, especially when so many better methods are available. Yet we repeat that most of the work is done in this way, and there are many now who understand nothing else by the term "bridge-work."

Cosmos.

Leaving the canals open is bad practice, whatever is used to render them aseptic. Though the contents are all removed and the parts perfectly sterilized, there will be trouble. The canals must be thoroughly filled and sealed.

T. W. Brophy.

FILLING ROOTS.

It is probable that there is scarce a practicing dentist in the country who will admit that he does not know all there is to be learned concerning the filling of root canals. And yet, comparatively, a small proportion of these operations are not open to criticism. The failures are not perhaps so much due to imperfect manipulation, as they are to defective preparation, for we assume that the sterilization of septic canals is a part of the process.

There are few practitioners who really comprehend the exact pathological condition of a diseased root, or who know how to restore it to a state of health. They are unable to distinguish between mere perioemental inflammation, and the breaking down of tissue beyond the membrane. Consequently, even if they know what course of treatment to pursue, they cannot tell when to stop it and fill the tooth. Overtreatment, it is well known, will defeat its own object, and destroy that which repair has already accomplished.

There are a few simple indications that will assist the practitioner in arriving at a clear comprehension of the condition of a root canal. Of course, if there has never been any breaking down of tissue above the apex of the root, the case is very much simplified. But if there has been—and this will almost invariably be the case if there has been a fistulous opening—then to determine whether this territory has become aseptic, and if the process of repair has proceeded far enough to make it safe to close the foramen permanently, requires good judgment.

One of the surest of these indications is the dryness of the canal. No tooth root was ever yet in proper condition for filling when it was damp. If the tissues above the foramen are yet breaking down, there will be serum about the apex, and this will find its way into the canal and make it damp at the extremity. The presence of moisture can best be determined by thrusting a smooth broach to the apex, withdrawing it and quickly wiping it on the rubber-dam. If it is not entirely dry, the traces may be seen on the rubber.

Perhaps the best dryer for root canals is hot air. If a common valveless chip-blower be exhausted of air by pressure on the bulb, and the point be held just above the flame of a gas burner or alcohol lamp, it may be filled with air as hot as desired. If now the point be placed in the cavity, a current of air so hot that a few blasts will raise the temperature of the whole tooth above the point of comfort may be injected. This will dessicate it completely. If the root is to be filled with chlora-percha, it should

now be well drenched with eucalyptus, and the hot air current again directed on it till the volatile parts are driven off and the remedy caused to penetrate well into the dental tubuli.

The eucalyptus is a partial solvent for the gutta-percha, and the latter very readily flows where the former has penetrated. Gutta-percha points may then be driven into the canal till it is full, and the dentist will have the satisfaction of knowing that every point has been occupied by the root filling. Of course, proper care must be exercised to avoid crowding the filling through an open foramen.

Ed. in Practitioner.

CLEFT PALATES AND LIME SALTS.

There has long been a mistaken idea among dentists, that teeth which are deficient in lime salts may be hardened and their texture improved by a diet that is rich in calcic matter. That pregnant women, who subsist on fine flour and the like, are depriving their infants of that which is necessary to produce good teeth, and that they should take phosphate of lime to furnish tooth pabulum for the needs of their own system, and that of the fetus.

Modern science has shown this to be an error. It is useless to give any form of lime salts for trophic purposes, because under no circumstances can they be assimilated. They may be useful as medicines, but never as foods, because the animal economy cannot organize the inorganic. If lime salts are needed, they must be derived from organic sources, and must be elaborated within the system. If phosphate or carbonate of lime be given, it must pass out of the body precisely as it entered it, and be eliminated. When these elements are needed the body will get them from the food, which must be organic, and then they can be built into the system.

There are many fables that have long existed among dentists, and one of these is that when lions and other felines are bred in captivity, the young have cleft palates because the mothers do not get bones enough in their food for the osseous system of their young, and that when she is fed on food containing plenty of bones the young are perfect. This has so often been asserted that, though we were well convinced to the contrary, we wrote to the Curators of the Zoölogical Gardens in New York, Philadelphia and Cincinnati, to know if there were any truth in the assertion.

All agreed that it is extremely difficult to raise lions, tigers and leopards, and that cleft palate is common. Mr. Brown, of the Philadelphia Zoölogical Garden, says:

"In well organized zoölogical collections there is no marked deficiency in bone-making elements in the food offered. The need is so elementary that it is always supplied; but defective assimilation on the part of the animal itself is probably variably present in all such cases."

Mr. Smith, of the New York Department of Public Parks, says that the carnivorous animals in the New York menagerie receive a very liberal allowance of bone every day, notwithstanding which it is very difficult to secure perfect young.

Mr. Stephan, superintendent of the Cincinnati Zoölogical Garden, says that unless the animals of the cat species are given plenty of bone with their meat when kept in captivity, they get weakly and puny. He has not been troubled with cleft palate in either lions, leopards or jaguars. He gives crushed bones, because they seem necessary to make the food digest properly.

We all know that dogs gnaw and swallow bones. Nature has made provision in all the carnivora for the digestion of every part of the animals which form their food, and if they be not given the bones they become unhealthy. Especially is this true in wild animals kept in captivity. Under such circumstances, when they breed, the young are imperfectly developed, and cleft palate is one of the commonest defects. The mother, too, is very apt to devour her young shortly after they are born, through some strange perversion of nature. But that the defects are caused by a lack of lime salts, or may be remedied by any system of artificial feeding, is not true in either man or the lower animals. It is simply a question of natural, wholesome food, and development under conditions that are foreign to the natural state of the animal.

Ed. in Practitioner.

Dr. Girdwood says: In crown-work, when taking a small impression and bite in plaster, done usually at one mixing by placing it over and around the root, and making the patient close the jaws to secure the bite, I find that if the bite be very close, or there is any undercut, the plaster is apt to be very badly fractured in removing from the mouth, and the fragments are often very difficult to replace. In such cases, take a few threads of cotton fiber, and having cut them fine with scissors, put a small quantity in the water before adding the plaster and mixing. A small quantity only should be used, or the cotton will mat together in a lump. The cotton binds the plaster together, and the impression usually comes away without fracturing. Should it fracture, the separation of the pieces is so slight that they are easily pushed together.

PLASTER OF PARIS.

Dr. James W. White, Philadelphia.

This material has now been for many years in dental use, and its merits are fully established. It requires nicer manipulation, and is not so cleanly as wax; but the results are so nearly certain, that they counterbalance any inconveniences attending its use. It readily conforms to the minutia of shape and irregularity, and if broken, presents clean, sharp, well-defined fractures which permit accurate replacement; the pieces being retained in place by a little melted wax dropped on the lines of fracture on the outside of the impression. It is chemically a native sulfate of lime, found in great abundance in many parts of the world. In its crude state it is called gypsum, and is prepared for use by being reduced to a fine powder, and calcined in ovens at a temperature between 300° and 400° F. If overheated, it parts with all of its water, and fails to recrystallize when mixed with water. This accounts perhaps for the imperfect solidification of some specimens of plaster. It is sometimes impure, by the original or subsequent mixture of foreign substances.

A difficulty may also arise if the plaster has not been ground sufficiently fine, in consequence of the setting taking place before the coarser particles have absorbed their quantum of moisture. In this case, the expansion, instead of taking place, as it should, while the plaster is soft, is continued after it has solidified.

When pure, properly ground and calcined, if mixed with water, a chemical union takes place, which is commonly called a "setting,"—the combining water condensing from a fluid to a solid, and liberating latent heat. The quality of this setting depends, moreover, not only on its original purity and correctness of manipulation in the manufacture, but largely on subsequent care in keeping it, and the manner in which it is mixed for use. As it has the property of absorbing moisture from the atmosphere, it should be kept in a metallic, earthen, or glass vessel, perfectly covered, and in a dry, warm place. Frost injures its quality. Plaster which does not work well, by absorption of moisture from the atmosphere, may frequently be restored by submitting it, in a dish or other vessel, to the ordinary temperature of the baking-oven of a cook-stove till it is thoroughly warmed through. It will not work satisfactorily if cold.

Presuming that it is a pure article, has been properly calcined and ground, and carefully kept, the next item of importance is, that it be properly mixed. It should be passed through a sieve of

bolting-cloth previously to being used. Warm (not hot) soft water is the best, if it is desired to have it set quickly. The temperature of the water used will decide largely the time required for its solidification. There is less liability of air-bubbles if warm water be used. The quantity of water used will also determine the period required for the setting; the less water the quicker it will set; but plaster mixed stiffly will always contain bubbles.

The best method of mixing is to take the required quantity of water (easily determined by experiment), sprinkling the plaster into it, till of sufficient consistency; if the reverse plan is pursued—the water poured into the plaster—it will crystallize unequally, and be filled with air-bubbles. A teacup or bowl is the best form of vessel to mix it in. Thorough stirring or beating makes it tough and pasty. The longer it is agitated and beaten, the less subsequent expansion there will be, for each granule becomes saturated (satisfied) before solidification takes place; whereas, if too little water be used, or the plaster is allowed to set before the center of the granules is saturated, they will continue to absorb from their surfaces, and expansion will continue with some plaster for a considerable time.

A question has been raised in regard to the expansion of plaster in the process of recrystallization or setting. That it does expand is admitted, but as it is only about $\frac{1}{80}$ of its own measure, it is not sufficient to interfere materially with the success of an artificial denture. It is claimed, and if true, it is a curious fact, that it expands less, or not at all, when salt or potash-alum has been added.

To facilitate the setting, many different substances have been recommended, such as common salt, potash-alum, potassium sulfate, sodium silicate (liquid silex), etc. Of these, the alum and silicate are unpleasant in the mouth, and the latter is unreliable, making the plaster set too quickly, while the potassium sulfate does not appear to possess any superiority over common salt (except that a very small quantity suffices, and in making models it causes no efflorescence). A small pinch is all that is required for an impression; an excess will cause too prompt setting, and will effloresce, making the impression rough on the surface—the tendency to which, however, will be obviated by promptly varnishing it after its withdrawal. A large excess of salt will retard the setting. The varying effects of different quantities are shown in the following results, obtained from a single sample of plaster, the quantity of water and plaster being in each case the same: The plain plaster set in five and a half minutes. The addition of two grains of salt caused it to set in five minutes, of four grains in

three and a half minutes, of eight grains in three minutes, of sixteen grains in two minutes, of thirty-two grains in one minute, of sixty-four grains in two and a quarter minutes, of one hundred and twenty-eight grains in eight minutes, and a saturated solution required twenty-four minutes. Some operators keep ready a pint bottle of water in which has been dissolved a heaping teaspoonful of potash-alum for use in mixing plaster for impressions.

Dr. S. E. Gilbert suggests the following method of taking a partial upper impression: Place enough plaster against the palatal surface of the tray to fill the mouth even with the masticating surfaces of the teeth, adding a little plaster around the inside of the rim; a rim of wax having previously been built across the palatal edge of the tray.

Dr. W. N. Chaffee suggests the following plan, when the remaining teeth are long, and having large crowns, small necks, and incline toward one another:

Select an impression-tray of suitable dimensions, preferably with a square turned rim, instead of an oval one, as it accommodates the teeth much better. Prepare the tray by bridging across the back edge with a thin strip of wax not thicker than a knife-blade, to prevent the plaster from dropping over into the throat. Then soften some wax in warm water, making it as soft as possible without melting, and roll it out into a stick as large as the little finger, and long enough to pass around on the inside of the border of the tray from heel to heel. Heat the tray over a spirit-lamp sufficiently to attach the wax to it, and lay the wax in around the border. The principal point to be observed in this method is expedition. After placing the wax in the tray, the plaster mixed with warm water, not to chill the wax, should be placed in the tray and introduced into the mouth as quickly as possible, while the wax is in a plastic condition. The wax takes the impression of the teeth very kindly, and the plaster gives a perfect impression of the whole palatal surface.

Dr. B. W. Franklin devised a tray for taking impressions of the lower ridge. This tray, or rather double tray, has an opening all the way round, except a narrow bridge at the front. The advantages of the opening are that when the under part of the tray is filled, and the upper part one-fourth full of plaster and placed in position over the ridge, the operator, with the end of the finger, can force the plaster into the under tray and secure a perfect impression.

For difficult partial cases Dr. A. G. Bennett suggests the selection of artificial teeth which are to be ground to fit in the spaces, and secured in place with hard wax. The impression is then to be

taken, and, after removal, the teeth are placed in position. This method requires no articulation out of the mouth.

Dr. Charles J. Essig suggests for obtaining impressions of difficult partial cases the following plan, but it is not applicable where interdental spaces are frequent or large:

An impression-tray should first be selected of the proper size and shape,—those with the flat floor are best for partial cases; the plaster should be mixed thin, almost as thin as water, adding sodium chlorid to facilitate setting. Now oil the tray, so that it will readily separate from the impression when hard; fill the tray as soon as the plaster thickens sufficiently; then, with a small spatula, place a layer of the soft plaster in on the palatal surface; otherwise by inclosing the air in the deep portion of the arch the accuracy of the impression may be impaired. After this precaution the tray is placed in the mouth, and gently pressed up till its floor comes in contact with the teeth. When the plaster is sufficiently hardened, remove the tray—which, from its having been oiled, is done without difficulty. With the thumb and index finger break off the outside walls. The portion covering the palatal surface is then removed by the use of a blunt steel spatula, curved at the end in the form of a hook. The pieces are then placed back into the tray, where they will be found to articulate with accuracy.

For taking a partial lower impression, where the teeth are elongated or loose, or lean in different directions, Dr. S. E. Gilbert advises to first obtain an impression in wax and make a plaster model; then fit wax caps over the crowns of the plaster teeth, extending almost to the gums. These wax caps are to be removed from the model, and placed on the natural teeth, and an impression taken in plaster as usual.

The late Dr. James B. Bean, of Baltimore, recommended that a wax impression should be taken, from which dies must be prepared; a metallic plate swaged, on which from ridge to ridge a strip of metal should be soldered. Between this and the plate he passes a stick, to serve as a handle in removing the impression. Then, after heating the plate, he coated the palatal surface with shellac, and on this placed a thin layer of raw cotton, which, adhering to the resin, and permeating the plaster batter, when poured on, prevented the thin impression from breaking up into fragments.

Prof. P. H. Austen, designed a gutta-percha tray, which is thus described: Take a wax impression and make a model; in partial cases, brush over the teeth of the model one or two layers of thin plaster, to fill up all under-cuts, and to make the plate fit loosely; saturate the model with water, and mold over it a gutta-percha tray. This last is done, not by using the gutta-percha in sheet,

but by first making into a ball, then working it from the palate outward, leaving a thick mass in the center. It should be, on the inside, from a fourth to a half inch thick, so as to be stiff and unyielding; but on the outside not more than an eighth or a sixteenth inch thick, so as to be slightly elastic and yielding. The whole inside of the tray must be roughened up with a scaler or excavator, in such a way that the plaster can take firm hold. In most partial cases, the impression will have to be removed in sections; the inside remaining entire, but the outside and the parts between the teeth coming away separately. Sometimes it is necessary to partially cut through the tray before putting in the plaster, and usually on the thick masses of gum which fill the interdental spaces. A cut on the inside, in line with the ridge, gives pliancy to an otherwise rigid tray, and permits its easy removal. When it is desirable to extend the tray around the entire arch, so as to get an exact plaster impression, not only of the gum, but of all the remaining teeth, this rim of gutta-percha must be slit at two or three points, to give that pliancy which is a chief merit in this form of tray. These trays have no handle, but are removed by inserting a plugging instrument into a small hole previously made in the back part of the tray where it is thickest.

Dr. Horace Dean describes a method of taking an impression of a partial upper case substantially as follows: Take a correct wax impression. In this cast a plaster model. Separate as soon as set. On the model place sheet wax to cover all the portions of which a copy is desired, including the palatal surface, but not the grinding-surfaces of the teeth. In the spaces between the teeth let the wax be quite thick. Over this wax plate carefully adapt a piece of wire mosquito-netting so that it touches the wax and the grinding-surfaces of the teeth. Coat with glycerol the parts of the model not covered with the wax. Pour a coat of plaster over the wax and net, covering the grinding-surfaces of the teeth and a narrow space behind the wax plate. When hard, separate and remove the wax. Try the shell in the mouth, and trim so that it goes easily into place and rests firmly on the ends of the teeth. Soak this shell in water, and fill with plaster mixed as usual. Place in the mouth, and press till it rests on the teeth.

For a full upper case take the impression in wax, and make a model. Mark on the model places where the shell can rest firmly. Construct the shell as before described, and take the plaster impression.

For a partial lower case proceed as before, except leaving a portion of the wire net just back of the front teeth, uncovered by plaster. This forms a hinge which permits the free ends of the shell

to be pressed toward the tongue, thus carrying the plaster past the teeth till the shell is in place. The wings may then be pressed against the teeth, and so held till the plaster has set; when, if necessary, the wings may again be pressed inward, breaking the impression at the hinge with a clean fracture, which serves as a guide to correct restoration.

The following method of obtaining an impression for a difficult partial lower case has been recommended:

When the mouth offers serious obstacles to the procurement of a correct impression—a broad jaw associated with a contracted oral opening; a cuspid and a molar, on either side, which, inclining toward each other, inclosed interdental spaces of dovetailed form; the teeth of that bulbous configuration consequent on an extensive absorption of the supporting structures.

An impression in wax is first taken, from which the plaster cast is made, and the teeth removed as usual; but before imbedding in the sand the entire surface is evenly covered with sheet wax one-eighth or one-fourth of an inch in thickness. When the metallic models are made, a plate of ordinary tin or tinned iron is struck for an impression-tray; perforated to permit the teeth to pass through, and a handle soldered to stiffen the appliance and facilitate its introduction into and withdrawal from the mouth. The tray so constructed is adjusted to freely slide over the remaining teeth, its interior thoroughly oiled, and small pieces of wax placed over the apertures to prevent the batter from escaping while inverted. Thus filled, it is placed in position (the teeth readily displacing the loosely applied wax over the openings), and allowed to remain till the plaster has sufficiently solidified, when it is removed, leaving the hardened plaster to be carefully extracted in sections and replaced in proper position in the tray.

The success of this method will be largely, if not wholly, dependent on the use of a stiff and unyielding cup, which will not bend or spring from the application of the requisite force.

For a full impression in which a metal die is to be cast, mix one-third of either fine sand, marble-dust, whiting, or pulverized quartz, with two-thirds plaster. Slowly and thoroughly dry the impression, and pour the metal at its lowest melting point. This plaster compound is also useful in difficult cases where an impression should be allowed to get quite hard prior to removal in easily broken sections.

The model should be taken before the plaster impression becomes dry, having previously coated it with something to prevent the adhesion of the plaster—a solution of soap, a thin wash of collodion, or sandarac or shellac varnish. The solution of soap is

made by adding an ounce of white Castile soap in powder or shavings to a pint of water, and heating it till the soap is dissolved. It should then be bottled, and poured out as needed for use, avoiding using it from the bottle, as it is rendered turbid by contact with a brush that has been used on plaster. Soap is best on a very moist impression; collodion or varnish on one partly dried. If the impression has become very dry, it is necessary to saturate it with water before pouring the plaster for the model. If varnish is used, oiling the surface after it becomes dry will insure the separation. The latter plan of varnishing the impression with an alcoholic solution of sandarac or shellac is strongly advocated, as the coloring matter by penetrating a short distance affords a guide in separating the model, and thus diminishes the liability to fracture or mutilate the cast—an accident often occurring where there is no line of demarkation, and one is obliged to rely on his mental outline of the case. The water with which the plaster is mixed for taking an impression is sometimes colored for the same purpose by the use of a few drops of a solution of carmine or anilin, or by the addition to the dry plaster of a small quantity of Venetian red, Spanish brown, burnt umber, cochineal, indigo, washing-blue, or vermilion. Enough of either to answer the purpose is not detrimental to the plaster, and gives it an appearance pleasant to the eye of the patient.

Cosmos.

ARE WE TO BECOME EDENTULOUS?

I have never seen anything to convince me in the slightest degree that we are to become edentulous, or that we are to lose the use of a wisdom tooth or the lateral incisor or any other. I believe to-day that we stand just as good a chance for a good set of teeth as we did thousands of years ago. In the skulls presented this morning in the general hall there is a chance for study and observation. I have a theory in reference to the stunted condition of teeth, that it is due to a specific trouble or disease in the system. You know very well that the papilla of teeth are affected very easily by disease, and that this disease may be so obscure that it may not be noticeable; and still you can find out that such and such a thing produces the disease, and if we would turn our attention to that one direction, to the history of the individual from generation to generation, we would find that one of his ancestors would have presented sufficient cause in his condition for us to believe that the disease was transmitted. There is room for study in this direction. That nature herself, for want of use, is to dispose of the teeth, in part or in whole, I cannot conceive, for I have never seen anything to make me think so.

Dr. Abbott.

DIPLOMA MILL IN KANSAS CITY.

The history of this concern shows that some years ago J. T. Atkinson procured a charter for the Kansas City College of Dental Surgery, and till lately used the charter to help along his "Cheap John" painless extracting shop. Within the last six months, however, he no doubt thought that, as times were hard, he could trap some unwary "old practitioner" into his new scheme to obtain a diploma without doing much except paying fees. At this so-called college at 1017 Walnut street there is nothing but a very commonly furnished dental office, where the chief business is wholesale extraction of teeth and making of rubber plates. There is nothing there belonging to a dental college—no faculty, no room, no nothing. This man Atkinson told the editor of the *Western Dental Journal*, a few days ago that he was "going to get up a faculty right off." He has talked that way for two or three years and he has made efforts, but every man he has approached laughed at the project.

We have received dozens of these circulars from all parts of the United States. Many old practitioners have written that they felt insulted to have the communication sent them; others calling attention to the fraud, and hotly advising that they should be prosecuted; others write to inquire if this is the "kind of business the Kansas City Dental College does." These last are hardly to be excused for even for a moment believing that the reputable Kansas City Dental College would be guilty of such a thing. The similarity in name, however, accounts for the mistake. It also shows that men have answered the Atkinson circulars, because they have been addressed to the Secretary of the Kansas City Dental College and opened by him and then sent on to 1017 Walnut street. No doubt many a matriculation fee has come to this fraudulent concern, for promises to send it have been made in letters from the victims.

We call on every dental publication in the land to publish this new Delavan fraud to the world. The Kansas City dentists have appealed to the authorities, and no doubt these circulars which make false representations will soon be excluded from the mails, and the concern closed. In the meantime, we warn all to beware of the Kansas City College of Dental Surgery.

Odontographic.

The fraud dental college in Kansas City, at 1017 Walnut street, run by "J. T. Atkinson, Sec.," which we exposed in the October number of the *Western Dental Journal*, is called the "Kansas City College of Dental Surgery." Remember the name. We ask every dental journal to unite in suppressing and exposing this concern.

Western Dental Journal.

THE EMERGENCY TREATMENT OF A TOOTHACHE.

Toothache is a little thing in books, but many physicians would rather meet a burglar at the door on a dark night than a call to cure a bad toothache of several days' continuance; a hypodermic of morphin only postpones the evil day, and usually the patient is respectfully referred to the dentist. The tooth should not be extracted while the jaw and gums are inflamed and the latter swollen, and it is the physician's duty to treat the case till the above conditions are removed.* Always keep a small vial containing the following mixture:

R.—Chloroform..... gtt. x.
 Glycerin..... gtt. x.
 Sat. sol. ac. carbol..... gtt. x.
 Morphin..... gr. j.

With a small wad of absorbent cotton.

Saturate a small pellet of cotton with the above mixture and put into the cavity or against the decayed surface; never pack the cotton in, or the more is the trouble, but have the pellet small enough to enter without crowding. This will generally end the trouble. When the gums are swollen and tender paint two or three times, two minutes apart, with a 4 per cent solution of cocain. Your patient may have been eating a good deal of fruit. The tongue and mucous membrane of the mouth are pale, stomach sour, and next day the toothache will return. Give ten grains of subcarbonate of bismuth and ten grains of phenacetin at once, and a similar dose before each of the three following meals, with a laxative if needed, and stop all fruit for a few days, and it will not return. The same powder every two hours, with cessation of fruit eating, will stop persistent, tormenting neuralgias.

John E. Weaver, M. D., Rochester, New York, in Medical Record.

There are many useful and ornamental things now made of aluminum; but in its pure state it is too soft for most purposes. Five or six per cent of silver is a great improvement. It makes it but a very little heavier, and yet adds elasticity, hardness, strength and toughness to it. It takes on and retains a better polish, and discolors the hand less in handling. It makes fine instrument handles, bands for artificial crowns, etc.; in fact, its use is almost endless. The addition of copper gives it the color of gold, with very little copper taste or tarnish.

*This is a mistake, and the treatment here prescribed is only temporarily successful.—
 ED. ITEMS.

EPSOM SALTS FOR THE PAIN IN BURNS.

N. F. Howard M. D., Dahlonga, Ga.

On the morning of December 5th, 1893, we were called to see Mr. W. S. Huff. We found him with the palmer surface of both hands and fingers burned to a blister. His wife's dress had caught fire and he burned his hands extinguishing the flames. When we saw him he had his hands in a bowl of water, syrup and soap, and was suffering intensely.

We gave him one-third grain of morphin and dressed the hands with lime-water and oil mixed. The pain continued, and at the end of thirty minutes we administered another dose of morphin; but there was no relief—the suffering seemed to increase. His skin became cold and was covered with perspiration, and his agony was so extreme we feared lock-jaw. In this emergency we decided to try a remedy my wife used with success in a burn twenty-five years ago. We dissolved one pound of epsom salts in two quarts of water, and immersed the hands of Mr. H. in this solution. Almost instantly he was free from pain. He was now so comfortable—talking and laughing with friends—that it was not easy to realize that he was the same man who was in so much distress a few moments before. We let the hands remain in the preparation one hour.

When they were put in the solution they were red, swollen, hot and painful. When taken out, these symptoms were about gone. Yet the remedy was so simple and safe.

The hands were dressed as before—with lime-water and oil mixed—dusting oxid of zinc on the raw spots where the skin was off. The hands were soon well with this light dressing.

In one hour from the time the hands were removed from the solution and dressed, Mr. H. was at the court-house attending to business.

Med. and Sur. Journal.

In irritable fauces, inducing nausea, it has been recommended to lessen the irritability by previously gargling with a strong solution of tannin, or potassium bromid, or with camphor-water; others have recommended that the fauces be accustomed to the presence of a foreign body, by passing the feather end of a quill over the parts a few times before taking the impression, or by directing the patient to manipulate the parts frequently with a spoon for a few hours previous to the impression being taken.

Such manipulation will, however, sometimes cause nausea and vomiting, especially if practiced after taking a meal. Others consider that the surest way to prevent retching is to force the patient's chin well down on the breast, after the tray is in place, and so retain it till the impression is removed. Others, again, direct the patient to place the tongue on the posterior portion of the tray, and retain it in that position. The act of swallowing is likely to produce a sensation of nausea by bringing the soft palate into contact with a foreign body; the patient should therefore be advised to avoid swallowing during the operation. Nausea is frequently induced by the tray extending too far back in the median line (a fault with many of the trays on the market), and by the use of too large a quantity of impression material. In exceptional cases of extreme sensibility of the mucous membrane to contact with any impression material, a 5 per cent solution of cocain applied lightly over the soft palate is said to have proven satisfactory. In like cases the administration of a few inhalations of nitrous-oxid gas has effected good results.

Dr. J. W. White, in *Cosmos*.

"TECHNIC SCHOOLS."

*Extract from an article in the "Scientific American," by
Robert H. Thurston.*

John Scott Russell thus defines technical education:

"What I call technical education is that kind of training which will make the new generation of Englishmen excel the new generation of foreigners in this coming rivalry of race and nation. The English live in the midst of an energetic rivalry of competing nations. The aim of our national life should be to do the work of the world better, more ably, more honestly, more skilfully, and less wastefully than the skilled men of other countries. If we are less skilled or less honest than others, we are beaten in the race of life. To the national welfare and success it is therefore necessary that the young race of men who are to do the work of England shall in his own special profession, occupation, trade or calling know more thoroughly its fundamental principles, wield more adroitly its special weapons, be able to apply more skilfully its refined artifices and to achieve more quickly, perfectly and economically the aims of his life, whether it be commerce, manufactures, public works, agriculture, navigation or architecture."

The same remarks are true as applied to the United States; for the Atlantic ocean has ceased to be, to any important extent, a wall of defense against foreign competition in the refined industries,

those which give wealth to the worker and diversification of industries to the nation. Our school and college curricula have hitherto been—and are still—vastly too exclusively literary to meet the needs of the people and the country. We have made hardly a beginning in the building of that great system of industrial training, supplementing education, which must, if we are to survive in the industrial rivalry of nations, soon be made to constitute an important and extensive division of the state and of the national educational structure.

THE ADVANTAGES OF MEMORIZING.

The favorite books of Tennyson were the Bible and Shakespeare. He once advised a boy to read daily at least one verse of the former and some lines from the latter. "The Bible," he said, "will teach you how to speak to God; Shakespeare will teach you how to speak to your fellows." It is well also to commit to memory many of these and other precious things, and thus make them our own in a way that the mere reading of them can never do.

Shall the memory be merely a sort of refuse chamber of odds and ends of personal experience, a junk-shop collection of things of little value, or shall it be a treasure-chamber filled with things of inestimable value, and radiant with light and beauty?

Let the habit of committing to memory be formed early. Let it be continued through school-days and all the after years of life. We shall thus become educated in a high and true sense—fed, for that is what the word means, on intellectual manna which might well be the food of angels. We shall be educated because widely familiar with the very best prose and verse in the literature of the world, and quickly and gladly responsive to the thought of the author. Not a few of these gems—"their price above rubies"—are short as to number of lines, and occupy but little space in print, as "Abou Ben Adhem," "Ozymandias," "Crossing the Bar," and a hundred others.

This habit, once acquired and steadily followed, is one of the most profitable and enjoyable that can be formed by quiet people who never have occasion to make a public address. To exercise the memory in the manner suggested is to strengthen it and to keep it strong. The imagination is at the same time cultivated, the vocabulary improved, and the best expression of the best thoughts of the masters becomes our own; just as the musician thoroughly at one with his art is what he is because of close sympathy with the tone masters, and his perfect knowledge both of letter and

spirit of the best things they have written. Beyond question this truth holds in literature no less than in music.

How many can repeat accurately a half-dozen of the psalms, or a dozen choice poems of moderate length which the world has taken to its heart, or a like number of fine things in prose? They are the finest of the wheat, and they remain when the chaff and saw-dust of non-essentials are utterly blown away. Securely garnered in the memory, these things lift the life by lifting the thought, the love. They elevate the entire being into a finer and purer atmosphere, make distasteful things that are low and mean present new ideas and new aspirations. Through them more and more we walk by faith in the unseen. And of all education, of mind and heart through life, this is the rarest and the best.

Often a single poem, made our own in youth, influences thought and character and affords gratification for a lifetime. A few days since a gentleman remarked in our hearing: "I thank the teacher who made me commit Bryant's 'Thanatopsis' to memory. I didn't want to do it, but he compelled it. I have thanked him ever since, and much more as a man than when a boy." It is quite possible for pupils to do fairly good work in the ordinary branches of school training, and yet to have one or two things like this stand out above everything else, to be remembered for a lifetime with gladness and gratitude.

We like the practical thought of Tennyson, which makes one part of this work all the while moral and religious. Let the selections be, if possible, the first from the Bible or sacred song, and the second from the world of literature, prose or verse, in other directions—say the ninetieth psalm and "Lincoln's Speech at Gettysburg;" or "Lead, Kindly Light," and Longfellow's "Psalm of Life;" or the twenty-third psalm and Lowell's "Once to Every Man or Nation;" or the nineteenth psalm and "Home, Sweet Home!" or "My Country, 'tis of Thee," and "The Chambered Nautilus;" or the thirteenth chapter of I. Corinthians and "The Last Rose of Summer;" or any others of hundreds of good things, moral, religious, patriotic, descriptive or sentimental in the best sense of the word, that we should all be very glad to have securely lodged in the memory.

Memorize accurately. Get it as the author left it, the exact words he used, and each word in its place. See the capital letters, the spelling and meaning of unusual words, and the punctuation marks, so you could write it as "copy" for the printer. This requires care, close observation, thought, and encourages the habit of close attention. In committing to memory also try to see the page in your mind as it lay before you.

Educational Journal.

TIN FOIL.

Dr. E. T. Darby, Philadelphia.

I look on tin as among the most valuable of our filling materials. Consider for a moment how many of the essential qualities tin possesses. It has adaptability, impermeability, indestructibility; it is one of the best non-conductors among the metals; it does not shrink. But it is inharmonious in color. It is claimed by some that tin has antiseptic qualities, but of this I am not sure. Bear with me for a moment while I pay my humble but hearty tribute to this metal as a filling material. My experience with tin covers a period of more than thirty years. I used it much when I began practice, because it was cheaper than gold, and at that time dental amalgams were poor. In the posterior teeth, when economy was to be considered, tin was the material selected, because it was the best; and though the preparations of tin were not as good as now, I am satisfied that I did my patients valuable service, and saved many teeth with tin, better than I could have saved them with gold, and infinitely better than I could have done with the amalgams then in use. Who that has used tin to any considerable extent will not bear witness to the saving quality of this material? For softness and malleability it has no peer. It fits the cavity with as great accuracy as a ball of putty. It possesses cohesive qualities but little inferior to gold. It discolors on the surface presented to the saliva; but who ever saw a tooth discolored from its use? Its non-conducting qualities are so good that it may be put in the most sensitive teeth without danger to the pulp. It is deficient in one quality, and that is hardness; hence it is not permanent on masticating surfaces, unless capped with gold. Were I asked what I consider the best material for filling the teeth of children, the buccal surface of molars, and the cavities on proximal surfaces which are sheltered from wear by mastication, I should say tin. But you tell me that it wears away and needs renewing. I admit that it has not the hardness of gold, nor will it wear as well when a large surface is presented to attrition; but it preserves the tooth till it is worn entirely out. I have seen fillings on masticating surfaces dished till the bottom of the cavity was nearly exposed, and yet around the borders the tin keeping its place and preventing further decay.

I saw but recently, in the mouth of a lady perhaps eighteen years of age, some first permanent molars that Dr. S. G. Perry, of New York, had filled with tin at least ten years ago—probably before the teeth were fully erupted,—and they were beautiful exam-

ples of the value of tin as a saving material. Tin may be worked in various forms. When the cohesive properties are to be relied on, there is perhaps no better method than rolling the foil into a loose rope, and cutting into pieces of various lengths. In cavities surrounded by strong walls, the tin may be folded into tape or made into cylinders, and time will be saved in introducing it into the cavity. Shavings of tin turned from a revolving ingot of the metal in the lathe, work with a softness which makes it a pleasure to use.

Cosmos.

THE SPRAYING APPARATUS.—A spray will remove much from the mouth that nothing else will reach. Use a hydronaphthol solution with it. Use it after operations for gingivitis. Use it to remove particles forced up under the gum in using the corundum wheel. Use it to dislodge stray particles of tartar which, in removal, lodge under the gum. Use it for the removal of pumice refuse. Use it for a patient with soft gums, and a generally filthy condition of the mouth. Try it, and you will never be without it.

R. Ottolengui.

TO DISINFECT AND BLEACH TEETH WITH PUTRESCENT PULPS, AND IMMEDIATE ROOT-CANAL FILLING.—Adjust the dam carefully; flood pulp chamber and canals with strong sodium-peroxid (50 per cent saturated.) This is a non-coagulant mechanical cleanser, a solvent of organic debris, a sterilizer of dentine, an active bleacher. Then apply on cotton dilute sulfuric acid; wash out, dry with hot air and fill immediately. In the upper teeth apply the sodium-peroxid on wisps of asbestos fibre. The strong solution would disintegrate cotton.

E. C. Kirk.

A small amount of aluminum—not more than $1\frac{1}{2}$ to 2 per cent—lowers the melting point of iron, makes it more malleable and of much finer grain. The surface is much smoother and much less liable to rust. Kitchen utensils and malleable iron articles of this alloy is becoming more common.

ALUMINATED SILVER.—Six per cent silver makes an elastic, tough malleable of great tensile strength. Strong bicycles can be made of it to weigh less than twenty pounds each.

FILLING WITH GOLD.

Dr. Edwin T. Darby, Philudelp^hia.

Since 1815, gold has been used in America more extensively than any other material, and it would seem to possess more of the desirable qualities than any other, and yet it is lacking in some.

While it possesses adaptability, indestructibility and impermeability, it is inharmonious in color, and is one of the very worst non-conductors. It possesses many qualities superior to lead, and some superior to tin. It has stood the test of nearly a century, and in the hands of the skilful occupies the highest place among the many. But it is not always best. It is not best because it is numbered among the noble metals, and costs thirty dollars an ounce, instead of fifty cents a pound. It is not best in the teeth of the young. It is not best in soft teeth with weak cavity-walls. It is not best in deep cavities where thermal changes are liable to affect the pulp. It is not best in the hands of mediocre talent. Thousands of men have to this day been endeavoring to save teeth with gold which they would have saved much better had they used other materials. It is best just in proportion as it is used with discrimination and skill. I have sometimes thought that the improvements which have been made in cohesive gold and in our mechanical appliances, all of which enable us to do with ease that which was formerly done with difficulty, have often tempted us to undertake more with gold than is wise or judicious. I am strongly of the opinion that more pulps are sacrificed on the altar of cohesive foil than were ever dreamed of when soft gold and hand-pressure were used exclusively. Just in proportion as our gold fillings are large and solid, just in that proportion are they dangerous to the life of the pulp. I would not be considered an advocate of soft gold to the exclusion of cohesive, for I use and teach the use of both; but I believe better results would be attained if many who are wedded to cohesive gold would use a larger proportion of soft gold in all cavities not requiring great retaining hold. I have a method of using soft gold which I have practiced for more than twenty years, and with such pleasing results that I have no desire to discontinue its use. A leaf of Abbey's "old-fashioned" soft foil No. 5, or Morgan & Hastings' soft foil, the same number, is cut into thirds. It is then folded into a tape about one-eighth inch wide. This is heated in the flame of the lamp or Bunsen burner,—not to make it cohesive, for it does not do that, but to make it tough. Treated in this way, it works more like a good article of tin foil than anything else. The bulk of all cavities

which have strong walls are filled by me with foil thus prepared. As I approach the surface of the filling, No. 20 extra-cohesive foil, or Watt's crystal gold, is used, and a hard surface is obtained. Fillings of great density may be made with cohesive foil; but density is not more essential than perfect adaptation, and with foil worked as I have described, this quality is obtained.

With all its faults, gold fulfills in a larger degree than any other material the desires of the skilful and conscientious dentist. Used by him with discrimination, and not to the exclusion of better materials when necessary, it will hold its high place in dental practice.

Cosmos.

The countenance may be pleasing, the smile fascinating and the manners charming; the language may be refined, the thoughts bright, and the whole character cultured—but if, when the mouth is opened, a cavern of death and rottenness appears, and the breath brings to us the foulness of the cesspool—the charm is broken. We turn away as from a sepulchre. It is strange such a walking death can be tolerated in good society. The filthiness of tobacco is relegating its devotees to smoke-houses and isolated places; these others must soon follow. The time was when a man saturated with stale tobacco fumes might have been unconscious that he was a nuisance, but now a man or woman to keep a respectable place in good society must have a clean mouth as well as a clean face.

The business man must frequently change the atmosphere of his confinement for the perfumed fields of social delight. The cry of gain must be changed for the songs of birds, the tramp of daily routine for a bounding run on the mountain. We are not made for one place, one occupation, one environment. Cage us even in a cage of gold, and it dwarfs our nature; clip our wings, and we are transformed from the soaring eagle to the dirty bird of the barn yard.

A Spanish monthly of dental literature, *La Revista Dental Americana*, is now issued at Philadelphia. It is intended for circulation principally in Latin-America, Portugal, Spain, and her Colonies. The idea is to give to these countries, through the medium of the Spanish language, the latest thought of the profession of the United States. R. W. Edwards, D.D.S., is the proprietor and publisher.

WRITE BRIEFLY AND TO THE POINT.

Here is a little good advice given by Dr. Northrup to the members of the New York Academy of Medicine, but which is of value to all writers:—Scratch out your introduction and begin where the subject really begins. Condense the body of the paper. End the paper where the subject ends, making its action like that of the piston syringe—begin, spatter, stop. Successful papers, almost without exception, are those written with one definite and predominating thought, on which every fact is brought to bear and toward which every argument is directed. Conclusions alone are, as a rule, sufficient, with pertinent facts so marshaled as to give them proper support. The various minute details of the stages by which these conclusions are reached are usually uninteresting, and had better be touched on lightly or omitted entirely. An expert editor by remorselessly stripping away the padding, is usually able to make an abstract that will present all the author's ideas and conclusions in one-fourth the space of the original paper.

Many a man who has had something of real value to say has first smothered the life out of it with padding, and then dug a grave and buried it in the midst of a five-column paper compiled from some text-book. It would be far better for professional literature if every man would content himself with writing what he really knows, instead of writing what he has only read. One new fact discovered, one new, live, practical, idea, is a sufficient subject for one paper, though it may be a short one. Two or three subjects for a single paper will render it weak or actually inert. A shot gun is adapted to small game, but large game is only brought down with a rifle. A single paper on a live subject, if it hits the mark squarely, will do more to establish a man's reputation than ten diluted and watery compilations.

The insertion of the tray in taking an impression may seem a trifle to the operator, but is frequently not so to the patient. Few lips will admit an impression-tray direct without an amount of stretching at once inconvenient and painful; and, in some cases, to secure a correct impression without subjecting the patient to serious discomfort, will require no little care and expertness on the part of the operator. Unusual width of the jaw is not infrequently associated with a contracted commissure, and, in addition, the muscles of the mouth may be rigid and unyielding. Another difficulty is in the common attempt of the patient to open

the mouth wide in an effort to assist the operator. The patient should be directed to guard against this by allowing the jaw and the lips to be entirely under the control of the operator, who, standing to the right of, behind, and over the patient, should present the tray obliquely to the mouth, one side resting against and pressing outward the corner of the mouth, while the opposite corner should be extended with the first and second fingers of the left hand; the tray should then be passed in with a rotatory movement to bring it into line.

Dr. J. W. White, in *Cosmos*.

A gentleman of my acquaintance has some cement fillings in some lower bicuspid, and when asked how long they had been there, replied thirteen years. They were put in by a gentleman of this city, who is practicing medicine now. It is seven years since I first saw them, and they are still as good as when first put in.

Dr. D. W. Barker.

I removed from the mouth of a patient, the other day, tartar one and one-half inches long, seven-eighths inch wide, which completely enveloped three teeth, extending from posterior surface of the wisdom tooth, and covering both molars. It weighed 165 grains, and was nearly one-half inch thick. Fully as much as this in addition was removed in smaller pieces. The imbedded teeth were badly decayed.

W. Z. King, D.D.S., *Alexandria, Ind.*

Dr. Crissman's formula for pulp devitalization (page 112 February ITEMS) should read: "White oxid of arsenic $\frac{7}{8}$," instead of "zinc," as printed.

In January ITEMS, page 26, in Dr. Hewitt's formula for local anesthesia, we give the amount of cocain as cxx. Though this is as given in the *Dental Register* from which we quote, we think it should read xxx.

In ITEMS for February, the formula for cocain, glycerin and water should be reversed, thus:

R.—Hyd. chlor. cocain..... grs. xxxviiij.
Glycerin..... fl. ʒij.
Aq. pur.ad fl. ʒij.

Dr. Pirtle, of Louisville, believes the loosening of teeth on a plate is from wax left on the pins. He says: To obviate this trouble, I use chloroform to wash the wax off the pins. It is applied either with a pledget of cotton or a camel's-hair brush.

I also mop the outsides of the teeth before investing, to be sure there is no wax on them that is not wanted, thus preventing their displacement in the flask.

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

Question 143. *A boy, aged ten, has all first molars very poor—one nerve exposed. First bicuspid are all erupted; no space for cuspids. What course should be followed?*

Extract first molars and create space for cuspids by permitting bicuspid to move backward and outward. *W. A. Grove, Tipton, Ia.*

Extract uppers and put gold crowns on lowers, as the lower seconds will be liable to tip if first molars are removed.

F. J. Bradner, Pulaski, N. Y.

If molars are too badly decayed, to insure permanent work, I should extract. As for the bicuspid occupying the place of cuspids, I should leave good enough alone, as in this case you can not tell where the cuspids will erupt.

L. M. Darling, D.D.S., Anita, Ia.

If "very poor" means very badly decayed, I should extract the molars on their own merits and not with reference to the cuspids. The eruption of cuspids will depend much on position and inclination, but it is doubtful if they make way into their proper places. Their fate should be decided after the second bicuspid are in place.

D. W. Barker, M.D.S., Brooklyn, N. Y.

My practice with children, in regard to first permanent molars, is to use my best endeavors to save these teeth, if there is a prospect of preserving them for many years of usefulness. But they frequently come to us in a condition that discourages any hope of keeping them long, and then, when it is decided that one must go, I believe it good practice to remove all four; even if some are sound. This should be done about the twelfth year, when the second molars are ready to erupt; and is done to equalize both sides and the occlusion, which is important. If the extracting is done at this time of life, the second molars will move forward (not pitch forward), and eventually take the place of first molars, while the third molars—when they come—will move forward accordingly. In the case referred to, I think everything indicates the removal of all four first molars.

R. B. Tuller, D.D.S., Chicago, Ill.

Question 144. *I extracted, under gas, left superior second bicuspid and first molar. The teeth were rather hard to remove, but were not broken, nor was undue force exerted. The removal of teeth was followed by headache, extreme pain, inflammation and a profuse discharge from the left ear. A few weeks later the patient was quite deaf in left ear. She had a painful time a year previous, when right upper first molar was extracted, but it did not involve the ear. The roots of teeth were of ordinary length. What was the trouble?*

A case of sympathetic neuritis. The primary cause being inflammation of oral mucous membrane extending to and involving the ear.

W. A. Grove.

The teeth had nothing to do with the trouble. Send the patient to an ear and throat specialist.

F. J. Bradner.

I think it a mere coincidence; the lady was suffering from inflammation of the middle ear at the time of extraction, and the pain was confounded with that of toothache. I think the deafness due to the débris accumulating from the abscess, as deafness, to any marked extent, from an abscess of the middle ear, does not result in so short a time.

L. M. Darling, D.D.S.

The question omits important data: Were either of the teeth abscessed and, if so, was the antrum involved? Any signs of discharge from the antrum after teeth were extracted? On the patient's return, had the wound healed kindly, or had there been any discharge from the sockets or other indication of carious or necrosed bone? These queries being answered in the negative, I can not see what connection the teeth had with the symptoms described. Perhaps the patient had an attack of the grip about that time, and associated her unpleasant experiences with her extracted teeth. I have seen several cases of the grip that exhibited the symptoms described.

D. W. Barker, M.D.S.

[In our question we should have stated that patient visited a physician, on account of continued pain, after teeth were extracted, and returned to her dentist in the condition as above described. Cases of this kind are too frequent. The dentist is often blamed for systemic troubles of various kinds, that, unfortunately, develop after a visit to his office, and the patients seldom think it proper to return for advice till the family physician has unsuccessfully dosed them with medicine, or searched for a cause and effect, often with instruments that are in a septic condition. When the fashionable hobby of malaria (traced through many branches) will not apply, the poor dentist is pounced on, and becomes, in the eye of human nature and medical science, as dangerous as the bacilli of cholera, or those that swim in the saliva of a rabid dog.—Ed. Q. B.]

Question 145. *How can extreme nausea, from slight irritation in the mouth, be overcome to permit the application of rubber-dam in ordinary operations lasting about an hour?*

I should recommend bromid of potassium, in large doses, a few hours before operation.

W. A. Grove.

Wet the dam with rose-water, wintergreen or anything that will overcome the rubber odor, which is very offensive to many. See that the hands are clean and free from odor.

F. J. Bradner.

The nausea may be due to various causes. There exists among drinkers and smokers, and those having tubercular trouble, a hyperesthesia of the tongue and palate, in which the mere extension of the tongue or the slightest irritation of the parts will cause nausea. Local anesthetics are not lasting enough in their effects. I should give a heroic dose of bromid of potassium, fifty to sixty grains two or three hours previous to the operation.

L. M. Darling, D.D.S.

Brushing the hard and soft palate with a ball of cotton dipped in a four per cent solution of cocain will sometimes overcome nausea so an impression can be taken. This might be tried, and, if successful, repeated as occasion required. If the sensitiveness has its origin in some physical cause, use temporary fillings, and defer the use of the dam. The internal use of cocain cordial, or esentia de coca, will allay nausea very much.

D. W. Barker, M.D.S.

I have used successfully, at times, strong mouth washes of different kinds as a gargle, and sometimes salt water. What will be successful with one will not always be with another. In such trouble I have sometimes used a spoon—the convex portion of the bowl—to gently push back on the soft palate several times, when it will be found that the patient will be able to tolerate it, when it seemed impossible at first. Have preceded the spoon generally with salt water gargle. The thought that the dam may have been used before, or may not be absolutely clean; if new, this may have something to do with it, and it is well in all cases, perhaps, to let patients be assured of the most scrupulous cleanliness. I invariably excuse myself, after a patient is seated in my chair, to wash my hands. I do it in this way that they may know that they are clean, and not have a suspicion that I have passed from the last operation to theirs without the proper cleansing. It is a satisfaction to your patients to know these things for themselves.

R. B. Tuller, D.D.S.

[We once had a patient effected in this way. He had worn an artificial set of teeth for twenty years, but could not place the teeth in his mouth in the morning, or after cleansing, without sprinkling the surface of plate, coming in contact with the mucous membrane, with fine salt. The use of salt prevented nausea from insertion of teeth and application of rubber-dam.—ED. Q. B.]

DR. E. N. FRANCIS.

Dear Sir:—Again I assert my impudence without invitation. I dislike to see anything go by default.

Regarding Question No. 130, in January number of *ITEMS*, I saw a similar case about two years ago, excepting that cramping followed the snapping of jaw.

The trouble was permanently cured by removing the third molars, relieving the muscular pressure.

Yours truly, WILL S. KELLY.

No. 39 South Main street, Wilkesbarre, Pa.

What is the best treatment for children's aching teeth? Is it advisable to devitalize; and what should be done with abscessed teeth?

See *ITEMS* for December, 1893, Question No. 127.

The eyes are the windows of the soul. See that their light is pure, steady, bright, and the wearied pilgrim over life's uneven road will find in them the same hope and courage as does the storm-tossed mariner from yonder welcome gleam on the hidden reef.

PRACTICAL POINTS.

Mrs. W. J. Walker, Bay St. Louis, Missouri.

Stirilization of Difficult Root Canals.—Introduce into the canal, as far as possible, a strong solution (50 per cent or more) of nitrate of silver; seal in the chamber, for a day or two, a pledget of cotton, saturated with the same solution. Then fill as successfully as possible.

C. T. Stockwell.

To Obtund Sensitive Dentine.—Drop a crystal of carbolic acid into the cavity. This is, usually, very efficient.

Dr. Grant.

Pulp Extirpation.—Apply a drop of carbolic acid, which will form an eschar on the surface of the pulp, running ahead of the instrument, so that the latter does not come in contact with living tissue. The pain is so inconsiderable that the pulp may be removed and the patient not know what is being done.

A. H. Boswell.

Application of Nitrate of Silver in Cavity to Arrest Decay.—Dip a silver wire into nitric acid and direct it exactly to the point desired, the nitrate being formed by the action of the acid on the silver.

R. N. Hofheinz.

To Secure Perfect Adaptation of Band to Root.—Take accurate impression, and make a model of good plaster; dry thoroughly; saturate with thin sandarac; varnish, and dry again. This gives a model hard enough to work on. Use coin gold which has a much greater tenacity than pure gold.

C. J. Essig.

Pulp Capping.—Place a thin film of Canada balsam (or copal ether varnish) over the surface of the pulp. Evaporate all moisture and flow thin oxisulfate of zinc over and beyond points of exposure. When hardened fill cavity with oxiphosphate. Paint the surface with copal ether varnish and dry with hot air before removing rubber-dam.

F. H. Gardiner.

Filling Teeth for Young Patients.—Remove as much caries as possible; soften a suitable piece of gutta-percha, and on the surface to be applied to the cavity-wall take up crystals of nitrate of silver; pack it in while warm, and leave till the gutta-percha wears away, when the child will be old enough to easily manage, and the dentine hard and without sensitiveness.

A. M. Holmes.

Immediate Root-filling When There is no Visible Abscess.—Remove mechanically as much as possible of the devitalized pulp. With syringe wash the canal repeatedly with $\frac{1}{1000}$ solution bichlorid of mercury. Without drying plug the foramen with a bit of cotton, and fill with oxichlorid, mixing 1 drop of $\frac{1}{2000}$ bichlorid of mercury in the cement. Complete the cavity filling immediately, and paint the gum with tincture aconit and iodin, equal parts, as precautionary. *Frank Abbott.*

Tooth Transplantation, Best Time for.—The retrogressive metamorphosis immediately following the extraction of a tooth, when the tissues are breaking down, does not present suitable soil for the attachment of new tissue. By waiting from three days to one week, and planting the tooth at the time when the socket is filling with the soft pabulum designed to obliterate the space, the parts heal kindly, the tooth becomes attached more quickly, and the final result is in every way satisfactory. *L. Ottofy.*

Stirilization of Instruments.—Immerse for ten minutes in a saturated solution of fluo-silicate (sodium-fluoride). This is an odorless and almost absolutely tasteless solution, non-toxic, and does not stain. *A. W. Harlan.*

Root-canal Filling.—After the canal is thoroughly prepared, inject a drop or two of a saturated solution of hydronaphthol in chloroform. Insert into this a gutta-percha cone as near to the apex as possible. Follow one cone with another till the canal is filled. Simple, clean, antiseptic, effective. *S. Freeman.*

Pyorrhœa Alveolaris.—In cases of severe pain, in addition to the usual treatment, use *externally*:

Morph. Sulph..... gr. ij.
Aqua. camph..... 3 ij.

Around the pockets.

And *internally*:

Chloralamid gr. iij.
Sodium bromid..... gr. viij.

Taken in water, at bedtime.

D. M. Sabater.

Accurate Adjustment of Logan Crown.—Paint the end of the root; the pigment adhering to the crown when tried, shows where to grind. *R. R. Freeman.*

To Whiten the Hands.—Use, instead of soap, the following paste:

R.—Pulv. acidum boracium..... lb. j.
“ Sodae carb..... lbs. ij.
“ Pumice..... lb. j.

Glycerin q. s. to form a paste.

A. C. Hewitt.

To Relieve Severe Headache, Following Dental Operations.—Administer a single drop of nitro-glycerine (one per cent solution) in half a glass of cold water. *E. H. Bowne.*

Treatment of Ulcers from Misuse of Arsenious Acid.—Scarify the soft tissues, and touch the wound with muriated tincture of iron; then cauterize with carbolic acid or iodine. Repeat in a few days, if necessary. *L. A. Faught.*

Electrolysis for Peridental Inflammation.—Moisten a pledget of cotton with the following solution:

Saturated sol. chloridum sodium..... $\frac{3}{4}$ vi.
Tincture Ergot..... $\frac{3}{4}$ j.

Apply to the parts on positive pole of the battery; negative with wet sponge attachment, applied over the affected parts.

F. McGraw.

To Remove Stains of Nitrate of Silver from Hands or Clothing.—Apply tincture of iodine, followed, after a few moments with ammonia; rub well. *Geo. A. Maxwell.*

For Congested and Inflamed Gums; also, Cracked Lips.—Tincture iodine and glycerin, equal parts. Add to one ounce of this mixture ten drops of deliquesced crystals of carbolic acid.

Chas. E. Francis.

To Soften the Hands:

R.—Fowler's solution.

Liq. potassæ arsenitis..... fl. $\frac{3}{4}$ iv.
Glycerin..... fl. $\frac{3}{4}$ iii.
Bay rum (genuine)..... fl. $\frac{3}{4}$ xvj.
Aqua pura..... fl. $\frac{3}{4}$ xxxij.

Use as hand-wash.

A. C. Hewitt.

To Secure Perfect Adaptation of Cap to Root.—Place a piece of thin copper (or tagger's tin) about the root and ligate securely. Force plaster of Paris in the open end of tube thus formed, up to the root. When set, remove all together and pour fusible metal into the end of the tube that was about the root, forming a perfect model on which to construct the cap.

C. Frank Bliven.

Conservative Pulp Treatment with Pulpitis.—Pulverized crystallized thymol sprinkled on the exposed pulp surface; flow thin cement over; work a little pulverized thymol in with the cement filling. (A tooth treated in this manner, after remaining free from pain for eight weeks, was extracted for microscopical study of the action of the thymol. The pulp "showed typical granulation, the thymol having produced a partial aseptic sup-puration, which was in the act of healing through granulation.")

Dr. C. Röse.

ITEMS.

WANTED—Man who understands dentistry, barbering and watchmaking thoroughly. Dentist, 912 Sixth avenue.

New York World.

* * *

There is great value in the combination of amalgam and gold. It is very valuable for extremely difficult places that would be very hard to fill with gold. I used to think it was necessary to allow the amalgam to harden and put the gold in at a later day, but now in all teeth where a matrix can be properly tied I combine the two metals at once, and finish the operation at one sitting.

Dr. S. G. Perry.

* * *

I think we have not fully appreciated the advantage in making large amalgam fillings, of taking off the excess of the mercury at the final finishing by the use of crystal gold. I do not know of any other means so prompt as this of freshly annealed crystal gold. It has been my practice for quite a number of years, in all amalgam fillings to take off the excess mercury in this way.

Dr. S. G. Perry.

* * *

AMALGAM-GOLD FILLINGS.—In compound cavities, I usually put my amalgam in and build up perhaps one-half to two-thirds of the proximal surface of the cavity, and allow that to harden, and then at a later date complete it with gold. Now I will make an admission for which I suppose I ought to blush: I have done that operation on front teeth, and the results seem to justify its use. I have filled a frail cavity in a lateral or central with amalgam, and while it was still soft I have scooped out a shallow cavity in the front, and after it had hardened, faced with gold. I have done this for several years, and have never seen one failure. Those frail edges have not broken, and the amalgam has held. It will hold in a shallow cavity better than any other metal filling.

Dr. D. W. Barker.

* * *

The early summer is the conventional season for college commencements, but the commencements of the Philadelphia Dental College, its thirty-first, and that of the Pennsylvania College of Dental Surgery, were held recently. In no profession has there been greater advance during the past fifty years than in the dentist's calling. The period does not seem very remote when a college giving special attention to dentistry was unknown. The specialization which has taken place in all pursuits has set apart the dentist from

the physician, and given the former a distinct profession. A course in dentistry now extends over several years, and the dentist must possess the advantage of thorough scientific training. This, with the numerous ingenious appliances, which supplement the work of the intelligent practitioner, has removed many of the terrors from operations in dental surgery which in former days were an excruciating torture. The modern educated dentist is a public benefactor. The dental colleges of Philadelphia have a well deserved reputation, and keep fully abreast of the best teachings in this specialty.

Ed. Public Ledger.

* * *

For a root-canal dressing, iodoform is the most certain. I have used it with success when everything else failed.

We have all had the teeth show a soreness and feel uncomfortable after filling, even when we have thought the operation thorough. I dry the canals thoroughly and fill with a dry dressing of iodoform and cotton, using just as much of the powder as will cling to the cotton. I then seal my cavity permanently. In the last year I have not had one result badly.

When I fill canals with gutta-percha points, I invariably wipe the dry canals with iodoform on a broach of cotton, moisten my point with chloroform, dip it in the powder and carry to place to stay. It would take much to persuade me to give up the use of this odorless (?) little medicine in my practice.

Geo. C. Schwartz, D.D.S.

* * *

When, in 1849, Dr. Hill introduced the stopping which bears his name, great hopes were entertained that it would take the place of gold; but it was soon found that it did not make a permanent filling. Soon after its introduction it was followed by the Bevens stopping, which was superior to anything which had preceded it, and, in my opinion, greatly superior to anything that has ever been known since that day. The formula was never divulged, and the inventor died a few years after he had introduced it. This material possessed qualities that I have never seen in any other preparation in which gutta-percha formed a part. It became exceedingly hard after it had been in the mouth a short time; and when an attempt was made to remove it, it was found to resemble horn, or rubber that had been vulcanized.

Most of the preparations of gutta-percha offered for sale contain oxid of zinc, lime, sillex, or feldspar, and are quite variable in their lasting quality. They are best adapted to buccal surfaces, and will preserve the teeth if watched with care and renewed when worn away. They cannot be numbered among the so-called permanent fillings.

E. T. Darby.

There has just been buried in a little village of England an old dentist who passed fifty years of his life in pulling out the molars of his neighbors, as he never knew any other method of practice than this radical proceeding. In his will he requested—truly a crazy idea—that there should be buried with him all the teeth that he had extracted during his life. His administrators piously carried out his wishes, and in his coffin there were placed thirty thousand teeth that the deceased had drawn out of his patients during his long career. Thirty thousand teeth! Just think of it! That makes almost nine hundred and fifty full sets of thirty-two.

From a French publication, in Cosmos.

* * *

To make adhesive tin for fillings, Dr. Darby takes an ordinary corundum wheel, one-half inch thick and two inches in diameter, as the model, which is molded in sand. The tin is melted in a ladle and poured into the sand, after which a hole is drilled in the center of it, so that it can be mounted on an arbor and turned in the lathe. A chisel in the slide turns off shavings of the thickness desired. Pure tin freshly cut from the wheel in the form of shavings is quite cohesive, and packs beautifully.

* * *

Bridge-work is, without doubt, one of the most important and exacting branches of our profession, and should be practiced only by those possessing the requisite attainments, who are governed by sound judgment and correct ethical principles. While some diversity of opinion exists as to the advisability of permanently fixing such appliances in the mouth, yet where the conditions justify it a fixed or stationary bridge should be inserted. Where this cannot be done, a plate of gold or some other material should be inserted.

Dr. G. W. Warren.

* * *

The fastest mechanism, artificial or natural, made to penetrate water for any considerable distance is, according to Mr. Jeremiah Head, Thornycroft's torpedo boat, *Ariete*, which, on trial, made 30.16 miles per hour. Aerial mechanisms are capable of very much greater speed. Canon Tristram told the biological section of the British Association, in his address, that Herr Gatke holds that godwits and plovers can do their 240 miles an hour, and the spine-tailed swift, according to Dr. Jerdon, can breakfast in Ceylon and sup in the Himalayas on the same day.

Knowledge.

* * *

The man who still persists in putting in the mouth extravagant cases of bridge-work is getting his patients into trouble.

Dr. C. M. Richmond.

EDITORIAL.

ADVERTISE ?

Yes, advertise. This sitting in your office sucking your fingers, waiting for people to find you out, is all nonsense. Get up, and make yourself known. Push out, and advertise yourself and your business. Advertise boldly that you are a skilled dentist, and make people believe it. Keep to the front, and, if you are what you profess to be, the community will honor you for your persistency.

"Shocking!" says a dentist who has advertised himself into popularity, and is afraid you will do the same.

Never mind his "shocking" surprise. Heed my advice and advertise right and left. Throw your money into it, if you have any, and yourself and your credit. Stand up straight, look confidence right out of your eyes, show it in your manners, and talk it out with the clear tone of a silver bell. If you don't believe in yourself who will believe in you? We would add only one little hint. Step aside while we give it to you. *Be sure to deserve it.*

But how shall we advertise?

Don't advertise at all. It is vulgar, undignified, unprofessional, useless, and is sure to rank you with the common quack. Don't even have a card in the advertising column of the newspaper, or on an advertising program, or on some ingenious poster or show-book. Keep your name off everything that even looks like an advertisement. And yet advertise. A hundred dollars a year for it is a small sum; two or three hundred is better.

Let me give a few hints from my own experience. I owe more of it to a woman than to myself.

It was in Winona, Minnesota, on the Mississippi, away back when that country was a frontier territory—forty-five years ago.—My! it almost makes me believe I am nearing old age. It was winter, and the snow and ice blockade had prevented the mail or any supplies from civilization for two months. We, that is wife and I and our five young children, had been having a specially

hard time. We had arrived the previous fall too poor to make us comfortable, or without anything to furnish a dental office. I had even to borrow my wife's rocker for a dental chair. My dental cabinet and tray consisted of a pine board covered with paper, and a few instruments. Some times a whole week would pass without even the extraction of a tooth; a filling was a godsend; the making of a plate, a fortune.

One day a load of flour was brought up the river on the ice, and we were able to send a dollar to Mr. Perkins for a sack. It was a paper dollar, and the wind blew it out of my boy's hand, and the drifting snow buried it, and George came crying home. Can you imagine how large that dollar bill was? It was certainly as large as the side of a house, and a big feast depended on what it would buy; for mamma had promised us for that supper a whole wheaten loaf and butter, instead of our accustomed corn meal and salt pork. We all had to go to bed hungry, for even the meal was low. The next morning I went through the snow-drifts to Mr. Perkins and, explaining the misfortune, asked him to trust me for the flour. "No," said he, "we don't trust strangers."

If a man has done a sharp thing during the day he is pretty apt to tell his wife. Mr. Perkins laughingly told this to his wife. But instead of joining him in the "joke," she said: "That was a mean thing of you, Mr. Perkins. That young man is having a hard struggle, and ought to be helped instead of kicked."

The next day she came into my office saying, "Doctor, I have a tooth I suppose I ought to have out."

Looking at it we replied, "It is too good to lose. I can build it up and make a serviceable tooth of it."

"Well," said she, "if you do that, it shall be a feather in your cap."

This was my first advertising, and Mrs. Perkins became my advertiser, though then I did not know she was Mrs. Perkins.

As for me, as soon as she left I ran to Mr. Perkins, with the dollar I had earned, for that flour. I could have got it of another grocer, but I was determined to regain, or rather to establish, my credit with the one who had snubbed me as too poor to trust.

In two or three days Mrs. Perkins brought in a neighbor for

some work, and then another, and soon had some more work done for herself, when I became aware who she was. During the month she had brought me thirty dollars. So you see our advertising No. 1 was *the praise of appreciating patrons*.

Advertising No. 2. One day after I had done a little work for an accompanying friend, Mrs. Perkins, said :

"Doctor Welch, I am ashamed of you, and of your office. You are a good workman, but the shabby appearance of yourself and your office disgusts those who would be your best customers."

"Mrs. Perkins," apologetically, "I can do no better."

"It is false," she replied with much earnestness; "you can have everything you need. Now do just as I tell you. Go to Mr. Jacobs, the merchant, and tell him I said he must let you have a carpet and nice curtains for the windows, and that Mr. Public Opinion will pay for them. Go to Mr. Johnson, the furniture dealer, and tell him he must let you have proper office furniture, and that Mr. Public Opinion will see that it is paid for. Do the same with your dealer in dental chairs and instruments. And then go to Mr. Clark, the tailor, and get a good suit of clothes on a like credit. Then have faith that Mr. Public Opinion will stand by you, if you act honorably with him."

In six months Mr. Public Opinion had paid every man, and made all of them my advertisers. So you see my advertising No. 2 was *professional appearance*.

Advertising No. 3. Dr. Pierce, passing me one day, said :

"Doctor Welch, I have just left a little eighteen months' old sufferer to die of congestion of the brain. For four days she has had spasms almost continually. As I saw you coming, I thought that possibly the child's teeth might have something to do with her condition. Suppose you step down to Mr. Lozier's and see what you think."

Going to my office for instruments, I went down. The child was yet in the unconscious state in which the doctor had left her, and evidently sinking. The four upper incisors were broken down to the gums and terribly abscessed. The face swollen out of recognition, and she had high fever. As I went immediately about extracting the roots, the father said :

"No, no, doctor; you are surely not going to take them out while she is in spasms? Besides, the doctor is not here."

"My man," I replied, "the doctor has left the child to die, and it certainly will die unless speedily relieved," so in spite of his remonstrance I extracted the roots, when thick streams of matter oozed from the sockets in abundance.

"Let her sleep," said I, "till she awakens voluntarily. She will need no more medicine, and have no more spasms. Give her nourishing food."

I soon had the confidence of the physicians, and they became my advertisers No. 3. Have such an intimate knowledge of diseases included in your specialty as to obtain *the confidence, co-operation and patronage of physicians.*

Our fourth mode of advertising was to be just as useful to the community as possible. I was a Methodist, and had a large Bible-class, and was faithful in other departments of church-work. I occasionally visited the day-schools, and after awhile, was placed on the Board of Education; I was also interested in all measures for the public good. Don't sham it. Don't do it simply as an advertisement. *Be good to the very core, and do good from the love of it.* Better advertise yourself in this way than advertise yourself as a smoker and beer guzzler, and the companion of the idle.

Advertisement No. 5. We occasionally published in the weekly papers short articles on dental subjects. For sometime we paid ten cents a line, but finally they became so useful and popular I was solicited to write without cost, and the expense I had incurred was taken out in dental work, which also became a source of advertising, for the editors were sure to write little editorials in praise of the work. Of course these made me blush, but they would do it. But in every honorable way be in good standing with the editors.

I intended to go a little further, but space forbids. Let me whisper the whole secret: Now don't tell those naughty dental society dentists, who will turn you out of the synagog for advertising—*Be, look and talk like a professional gentleman, be skilful in your business and be useful in society.*

TOO MUCH MALLETING.

Miss S. had two beautiful gold fillings put in her central incisors. The teeth had never troubled her, but they were partly broken down and looked badly. The severe pain of that malleting for two long hours was dreadful, but she was proud of those two contour fillings for three days. The teeth had been very sore from the first, as the doctor said they would be; but now they began to throb and pain severely. She returned to the dentist, who told her it was only from the shock of malleting, and would soon subside. A little Heaven's Cordial gave relief, and she left much encouraged. But soon all these symptoms returned, especially on exposure of the teeth to heat or cold, or touch.

In about three weeks the gums swelled prodigiously, the nerves of both had died, and now an abscess was coming on each. What could be done? She went to two or three dentists, but they were not willing to guarantee a cure. Reader, this is the sad effects of overmalleting. Do you say it might have been from the too near proximity of the nerve? Of course this should have been determined before filling, and on the slightest evidence of it the foundation of each should have been wiped with cotton moistened with tannin, creasote and oil of cloves, then coated with Canada balsam, and the cavity temporarily filled with oxiphosphate.

In a month, if all remained quiet, a little of this cement filling should be cut away and the shallow space plated with gold. In such teeth hand pressure is better than malleting. There are other ways which would have proved successful, but every intelligent dentist should have some way. Who has a better way? But severe malleting must be avoided.

We are not sure the popular ways of taking recreation are the best. We make overwork at our business an excuse for overindulgences in eating and drinking and other vices at some summer resort. Is it not foolish to so spend our vacation as to come back to our normal life enervated and demoralized? The etymology of recreation is as its orthography suggests, re-creation. Such a

revival of our energies is not brought about by laziness, much less by dissipation. Would it not be better to observe the laws of life and health and happiness the year round, whether we take a furlough or not? It may be excusable to represent to our patients now and then some of the wearisomeness and physical and mental strain of our business; and yet, taken as a whole, few of us have very hard work.

It is not nearly so hard as the physician's or many other occupations, such as the hodcarrier's, or mason's, or shoemaker's. We should be less wearied, and have less to find fault with, if we used the saw and the hoe more, or in some other way found diverting employment for mind and body. We need an avocation just as much as a vocation, and they should go hand in hand.

THE POETRY OF PROSE.

Many years ago we casually looked over a book on "Pulpit Style;" but its own style was so inspiring, we commenced the book again and read it thoroughly. Its esthetic and graphic composition was charming. Almost every sentence was a picture. Every paragraph had in it a bunch of roses of delightful perfume, or apples of gold in a picture of silver, or a shower of sparkling light on a beautiful landscape. Thus every thought was clothed with striking vivacity, and we were continually entertained by a delightful panorama. Varied? There was no end to the variety, and so rapidly did the scenes change, every step was a surprise. It was better than a kaleidoscope; more natural than a pantomime; more artistic than a painting. Now comes the stately, measured step of the man of wisdom; then the winsome, winking, blinking cupid. Soon we hear the heavy tread of the giant; now a little cherub trips out laughing so merrily we laugh at its laughter. Over the hills we come to a pastoral scene, so quiet and lovely we want to rest there; suddenly a gathering storm tears down on us with such fury we run to the great rock for shelter. Forked lightning and deafening thunder, dashing tornado and

roaring torrents frighten our very soul ; then the sun smiles and all is still again. We can't tell it.

Only a few years previously we had known the author as an awkward, clumsy, illiterate, country preacher ; unprepossessing, raw-boned and coarse. Not long after the book was published, we accosted him with, "Pittinger, I have read that book of yours with delight. Its composition is rich and graphic."

"I am glad you like it," was the modest reply. "I spent so much time on it I feared its style would appear labored. When you first knew me I felt my awkwardness, both in conversation and in the pulpit ; and, though I had no money to spare, I attended a school of elocution, and made the whole subject of language and oratory a thorough study and constant practice. That is a small book, but it is the labor of years."

The poetry of prose requires as much study and practice as the poetry of meter. It is a beautiful attainment ; a pleasure to author and reader ; but like every other intellectual acquisition it demands enthusiasm, perseverance and esthetic taste. Some make the most prosy subjects poetic, others the most poetic subjects prosy. Sir Lytton Bulwer was a great success in poetic prose, but indifferent in meter and rime. Though Ruskin has written few verses that can be praised, he has composed so much beautiful poetic prose that he is the proposed Poet Laureat of England.

All cannot be artists, but many may take pleasure in art. Few are exquisite painters, but many are inspired by what they can do. So all cannot be poets, either in verse or prose, but most can attain a style pleasing in something and forcible in simplicity. All rime is not poetry, but much that has neither measure nor rime is true poetry.

Do good while you're living. When you die, you're a long time dead, and epitaphs serve no special purpose in this world except to gratify the vanity of the dead and the curiosity of the living. The epitaph "ever generous" would look better pasted on the head of a barrel of flour, and sent to the sick mother round the corner, than on a tombstone.

HINTS.

The lungs of the average man contain about five quarts of air.

* * *

Some time ago a powerful negro presented himself to a dentist for treatment for an aching tooth. The prospect of relief seemed to cause a subsidence of his courage. He admonished the dentist "to be very careful, as he had a powerful weak jaw; and s-say, boss, hev yer got any dis yere pulverized air as yer could give me, so as I couldn't feel it?"

* * *

Get all the good from others you can; but if you are successful you must have thoughts and plans and methods of your own. Even the knowledge others give you must be well digested and made your own by patient and persistent experience.

* * *

We were passing through a cornfield one night and heard a great deal of cracking and miniature explosions. Coming to the farmer's house we asked if he could give the cause. "The corn is growing," said he.

"But do you hear it in this way during the day?" we inquired.

"No," was his reply "neither corn or any other vegetable or animal grows much during the day."

It took us several years to believe this; but observations and demonstrations have confirmed it. How many "little things" of common life escape our attention that have in them profitable lessons. Nature is a wonderful book, made up largely of little things we are every day overlooking.

* * *

Many dentists are under the impression that the Donaldson bristles are made for the sole purpose of extracting the nerve. A nerve broach is better adapted for that purpose. A Donaldson bristle is a series of knife blades, which is twisted into the nerve-canal and cuts the pulp into a mass of small pieces. In withdrawing, it is apt to leave what it has forced before it in the canal. A nerve broach, if adapted to the canal—in other words, is fine enough at the point to pass freely up almost the entire length of the canal, if given a half or not more than a three-quarters turn, will entwine the nerve around the instrument, and in withdrawing the broach you have the nerve.

A persevering man of one idea is pretty sure to succeed in his business. Yet, unless he takes in other interests, he will disappoint himself and the world. He will be narrow-minded and unequally developed, unreliable in judgment, selfish and cranky. Such a person's success will be money-getting at the expense of social enjoyment and general usefulness. He will lack a broad-minded wisdom, the pleasures of a big, loving heart, and the riches of an overflowing philanthropy; these are only possible to wholeness of character, broadness of development, a spending and being spent for humanity. Our business must be our servant, not our master, we must control it, instead of it controlling us, it must be our means, not our end.

* * *

Some superficial observers, in trying to establish proof of the alleged mental inferiority of women, and also in trying to account for anatomical alterations or constitutional weakness of women, supposed to be due to error in dress, ascribe the condition to heredity, on account of the female ancestors. They forget that the boys and girls of a family are born of the same parents and are likely to inherit the same perfections and imperfections. Thus, the girl is not more likely than the boy is to inherit a weak constitution on account of the mother's tight lacing, too slavish devotion to society, or exhausting family cares; the girl is not more liable than her brother is, to be intellectually inferior because the mother was not called on to use her brain in study, business, or politics; nor is the boy in more danger than his sister of inheriting his father's taste for alcoholic drinks.

* * *

Because some can talk glibly, write fluently and manipulate skilfully without hesitancy, and seem to have few obstacles to success, and we have difficulty on every hand, we get discouraged. But the ease of their success is generally only a seeming. While you have been taking things leisurely, contented with common things, and going around obstacles instead of breaking through them, they have been mastering difficult problems, attaining delicate and exact manipulations, and learning the most hidden mysteries. To you they appear geniuses, but we know that you can succeed *if you will*, and that whatever is learned under special disadvantages is sure to stand by you, and to be made the more practical than if acquired without struggle. Few who learn easily prize it, few who jump into success appreciate it, and few who get wealth easily, retain it. But when success and wealth and honors are bought by hard work, we become such a vital part of our position it cannot be taken from us.

FOR OUR PATIENTS.

DENTAL HYGIENE.*

Who has not had the experience of admiring a handsome woman, on whose beauty it is a privilege to gaze; in whose well preserved person the casual observer might take pride, till a smile parting the ruby lips shows defective and discolored teeth? What a blemish on the fair picture! What a discord in symphony!

The care of the teeth begins with the cradle. It is deplorable that mothers are so ignorant, so careless, and so indifferent to the welfare of their children's teeth.

Can we not arouse their interest, convince them of the necessity of expending more thought, more time, more care on this branch of physiology, thus averting suffering and future mortification?

Children are rarely taught to use the brush, though it is so important. Many arrive at years of discretion without a thought of the teeth beyond a superficial dash at them with the brush once a day. They never visit the dentist, except with an aching tooth, or in fear of disfigurement.

The aching tooth, the quivering nerve, the severe suffering and the large bill would never have been had the teeth received proper care. An ounce of prevention is worth a pound of cure. With us rest the responsibility of instructing mothers who visit us in the interest of their children's teeth; and with them rest the greater responsibility of enforcing obedience to this advice. See that little toddler, so interesting and winsome? Observe the care bestowed on it by the mother. She would not omit the morning bath, the change of raiment, or the curling of the hair, and yet that painstaking mother puts baby down to his playthings with a kiss on his rosebud mouth with never a thought for the pearls within. That child has candy, too; all he can eat, because he wants it, and he eats of all the indigestible dishes on his father's table, simply because he will cry if he does not get them.

He ought to have simple, nutritious food—cereals, pure milk, good bread, and a little tender juicy beef or mutton, which has never been near that invention of the devil—the frying pan.

The opinion seems to prevail that the province of the dentist is to relieve, not to prevent disorders.

It is not infrequent that a little patient visits me with indescribable pain, which could have been easily prevented by a

*The author of this failed to send his name.—ED. ITEMS.

more timely visit. But care of the teeth to prevent decay, and promptness in attending to its first appearance, does not seem to have entered the mother's mind.

Many of the most intelligent people neglect their children's temporary teeth under the impression that they do not require attention. Yet we know the health of the permanent teeth depends largely on the condition of the temporary. That mistake should be remedied. We must speak more on this subject, in season and out of season, and especially to mothers, and when children are brought to us. I have more than once lost a good patient by refusing to extract an aching molar for a child whose parent dreaded the discomfort of a restless night.

A great many cases of irregularity are caused by extracting the temporary teeth too soon. Nature intended them to remain their allotted time, and it is for us to insist that her laws shall be enforced, except in those exceptional cases which we can hardly fail to recognize.

The usual time to extract the cuspids is about the eleventh year, the last molars about the twelfth or thirteenth year. It is not unusual to mistake the first permanent molar for a temporary tooth, and some parents cannot be persuaded of their mistake.

We are glad to note a growing enlightenment on this subject, though the change takes place with leaden footsteps. Sometimes a good brushing every day is the only treatment necessary, but generally the patient is not in possession of sound teeth.

It is not an easy or a pleasant task to properly clean and treat children's teeth, but it is a duty. I try to make the molars last till the patient is about twelve years of age. If I find the nerve exposed, my treatment is to destroy and remove the bulbulous portion of pulp, apply carbolic acid for a few moments, remove, keeping the cavity dry, then cap the remaining portion of the nerve with equal parts of camphor and iodoform mixed with glycerin. I sometimes make two or three applications, and finally leave a good portion of it covering the nerve, and fill with oxiphosphate. It is also a fine dressing for the permanent teeth after pulp has been destroyed, or in putrescent pulp.

Of course, we cannot prevent decay in every instance, neither can we save all teeth, but we can prolong the usefulness of nearly any tooth.

Avoid all secret preparations of cocain causing swelling and sloughing of gum, fetid odors, and sometimes throwing the patient into hysterics or fever, often leaving the gums so swollen that it is almost impossible to wear a denture for a long time after the teeth have been extracted, and impairing the health. Unprincipled

dentists extract hundreds of teeth which might have lasted for years.

I do not decry altogether the use of cocain. It is a blessing to modern dentistry. Used with discretion, it is invaluable.

Recently I extracted a tooth for a young man which I considered beyond redemption. At the time I pointed out to him the urgent necessity of filling several cavities. Some days after he returned and, as he settled himself in my chair, said complacently: "Give my teeth a first-class manicuring, Doctor; get them white, and polish them up fine." The thought of the cavities never crossed his mind. I asked him how often he used the brush. He actually could not remember the last time he had been guilty of its use. Yet he was a regular graduate in law. Did I perform that nauseating task for him? Not much. I told him to go home and use his brush diligently for a week, and then I would see what could be done for him. Of course, he came no more, but I have roused his sluggish interest enough to realize the magic of a good brush plied by a faithful hand.

Another patient comes in, troubled with an abscess. He wants the tooth extracted immediately, and as for the fifteen or twenty fillings needed, he says he could never afford to pay for all that work. Alas, poor man! he does not realize that several times that amount may have to go to the physician from the influence of the diseased condition of the mouth. Diseased teeth affect the whole system. Let us strive to impress our patients with the importance of keeping the teeth in good condition, that they may properly masticate the food, and be a blessing for life.

SELF-HELP.

A young man writes us for advice, how to become a dentist without money to take the regular course. He has been for a time in a dental office, and the question is: "How and where can I practice without going to college? Or, if I must go, how can I pay my way?" We replied: "Be a thoroughly qualified dentist or none. Earn the money somehow, or even borrow it from a friend, but don't come into the profession illy prepared. Go through in the regular way by some means, or turn aside to some other calling."

He writes again, saying he has no friend who can lend him money, but proposes we shall advertise in the *ITEMS* for six hundred dentists who will each pull a tooth and send him the half dollar. "This," he says, "will see me through the first college term."

How many ways we have to evade self-help. And yet, self-help is generally the only help which will bring us to success. That young man whose path is strewn with roses and dollars seldom amounts to much.

How different this boy's plan from the farmer's boy we have knowledge of, who became an eminent physician. His parents were so poor they could send him only to the short winter terms of the district school; and even for these he sadly lacked books and clothes.

He was fourteen years of age when he awakened to the burning ambition to get a thorough education and become a physician.

"Father," said he, "I must have a good education. I know, with so many mouths to feed, you cannot help me much. Let me help myself."

"Boy, you are crazy," answered the father. "Do you know what it would cost?"

"I know it would cost much money and time, but I believe I can accomplish it."

"Better go about your work, and get such vagaries out of your head. We have just as much as we can do to keep our heads above water now. The only time I can spare you from work is when you must go to the winter school. You will never get more education than you find there, so you may as well dismiss your dream." And the boy was sent off to his chores.

The mother, hearing the conversation, added, as the son left:

"I wonder what the boy means? Can he realize the magnitude of this undertaking without our help? And God knows we could not help him."

"He will soon forget all about it," added the father. "Wants to be a doctor. The idea!"

As his mother was mending socks a few evenings later, the son ventured to say:

"Ma, do you think pa would mind giving me the corners of the garden fence this spring, if I tear out the briars?"

This was an old-fashioned rail fence, which always takes up much room that is not used.

"Why, no," replied his mother. "But what in the world could you do with such ground?"

"Plant potatoes in it."

"It would be hard work rooting out those briars, and where would you get the seed? It would take two bushels, and how could you buy them? We shall certainly have none to spare."

"I could get the briars out odd times before spring, and the

seed would cost nothing ; for when you and I are paring potatoes, we could save the seed ends and have plenty."

"Bravo, my boy ! I will see what pa says, and I believe he will give his consent."

A mother will often come into a child's plan, while the father is antagonistic or indifferent. Suffice to say, she gained the father's consent, and the boy went to grubbing as soon as frost was out of the ground. He was so thorough and industrious that, when planting time came, his father said, "if he would tend well to his patch, and keep the briars and thistles out, he might have all the ground the next year that his coming crop would plant, if he would plow and manure the ground." That fall he had sixteen bushels. Of course, the next year he kept his father to his promise, and by adding all the seed ends he could save, he planted three acres, besides replanting the corners of garden fence. His neighbor Jones had taken so much interest in him that he had employed him several days during the winter, especially holidays and Saturdays, and now he returned the work and supplied manure.

How proud he was that fall when he took load after load to town, and returned with the cash in his pocket!

Of course, his efforts toward self-help made him the more studious and industrious. His advancement and enterprise surprised every one. The next year both father and mother were thoroughly convinced that their son would succeed. During the last two winters at the district school, and during odd times and rainy days through the year, he had been so studious he was quite up with his teacher in every branch.

"Now," said he to his father, as the third spring approached: "I want two acres more, that I may add sweet corn, melons, and the Hubbard squash to my crop. Mr. Jones owes me enough to plow and manure the five acres."

Such a boy is quite apt to have his way, for his way is quite apt to be in the right direction. The boy was very faithful about his ordinary work, doing quite as much for his father as before he did anything for himself ; and every one was willing to help him because he was willing to help himself.

Need we pursue the narrative further ? Of course, he succeeded admirably during the following summer. By having a little ready money, he hired neighboring boys to help him, and was able the next winter to commence his academic course. The term ended with April, and in May he again went lustily to work to be ready for his second term in the fall. After three winters at the academy, he entered a medical college, and in due time graduated with honors.

All through his studies, he was the better in body, mind and spirits for his hard physical work, and his mental training and foresight on the farm. The necessity for extreme frugality at school did not hurt him. Though he boarded himself and studied fourteen hours a day, and often fifteen hours, he was stronger and clearer headed, than those who studied but eight or nine hours and lived sumptuously every day. By his self-help, self-reliance, and self-supporting scholarship, he also laid the foundation for that independent thoughtfulness, and sharp, penetrating investigation of subjects and diseases that made him eminently successful in his medical practice.

All boys will not choose this course, and if they should, many would not succeed. But where there is a will there is a way; and where there is no strong will there is a lion in the way. There is nothing possible to a lazy, thoughtless, headless boy; but there is everything possible to a courageous, industrious, honorable boy, and in manhood there is always a place for him.

Do not be mere imitators. Be observant, deferential and teachable. Allow no one to be wiser or more skilful than yourself, if they will give you what they have; but what your own experience teaches you is worth more. If you would grow, even your own experience will be outgrown. Day by day you will be leaving what you are for something better. What you now are must only be a stepping stone by which you can raise yourself higher to-morrow, and that another to get higher still. In this way must come exaltation, progress and success. Even that success must soon be counted failure, if not improved on. Be discontented till you reach your ideal. And though that ideal is noble, pass it quickly for something still more noble beyond.

A man too proud to be gentle, too rich to be dependent, and too aristocratic to be a servant, should not be a dentist. Often he will have to bend to conquer, be obsequious to please, and tractable to be popular. There must be nobility without ostentation, independence without haughtiness, and subservience without cringing. Patients expect a dentist to be a fellow and yet a man, social and yet reserved, sympathetic and yet dignified. The relation between dentist and patient is so delicate that awkwardness is disrespect, blunders degrading, and thoughtlessness disgusting; coarseness is intolerable, vulgarity a crime, and immorality past forgiveness. Therefore, the man who is not a gentleman in demeanor, skilful to the very finger tips, and esthetic in all his tastes and habits, had better turn aside to some other employment.

NOTICES.

The Tennessee Dental Association will convene in Nashville March 27th to 30th.

* * *

The Southern Dental Association will hold its next session on the 30th of July.

* * *

The Louisiana Dental Society held their annual meeting in New Orleans, February 7th to 9th, inclusive. Unusually interesting papers were read and discussed.

* * *

The twelfth annual meeting of the North Dakota Dental Society will be held in the Dakota Hotel, Grand Forks, North Dakota, June 20th, 21st and 22d. A cordial invitation is extended to the profession.

* * *

The Northern Ohio Association meets in Port-in-Bay Island, June 19th.

* * *

Dr. V. C. Bell, of New York, publishes a book for the public on "The Teeth and Mouth," which is well calculated to attract and instruct the masses. It is the outgrowth of observations made in daily practice. Deploing the lack of dental information, this means is taken to educate the public. This ignorance is lamentable, because the consequences must be felt during the whole life. He candidly believes that were the information contained in this little book generally diffused, and its teachings well followed, much pain and suffering would be prevented, and life lengthened.

This book has, therefore, been prepared in the hope that it may be used to spread a knowledge of the importance of the dental organs, especially to the young, through the medium of the schools. It is not written especially for dentists, and therefore simple language is used and technical terms are avoided. At the same time professional men may find it useful, and it is therefore dedicated to dental practitioners and their patients.

It can be had of The Wilmington Dental M'f'g Company, and of the author. It is a fine book to lay on the center table of the dentist's reception-room. A few copies for gratuitous circulation would be seed well sown.